CDP-CE535

SERVICE MANUAL

US Model
Canadian Model
AEP Model
Australian model

- CDP-CE535 is similar to the earlier CDP-CE525 model.
- Refer to CDP-CE525 service manual (9-922-829-XX) for information not contained in this service manual.

DIFFERENCE TABLE

Note:
Items marked "*" are not stocked since they are seldom required for routine service.
Some delay should be anticipated when ordering these items.

• Abbeviation
CND : Canadian model
AUS : Australian model

Page	Ref.No.	CDP-CE525			CDP-CE535		
		Part No.	Description	Remark	Part No.	Description	Remark
			EXPLODED VIEWS			***EXPLODED VIEWS***	
40	2	3-704-366-01	SCREW (CASE) (M3X8)		4-210-291-01	SCREW (CASE 3 TP2)	
41	52	4-997-418-01	PANEL, FRONT		4-997-418-31	PANEL, FRONT	
42	123	* 4-997-419-01	PANEL, BACK (US)		4-997-419-51	PANEL, BACK (US)	
	123	* 4-997-419-11	PANEL, BACK (CND)		4-997-419-81	PANEL, BACK (CND)	
	123	* 4-997-419-21	PANEL, BACK (AEP)		4-997-419-61	PANEL, BACK (AEP)	
	123	* 4-997-419-31	PANEL, BACK (AUS)		4-997-419-71	PANEL, BACK (AUS)	
43	174	* A-4724-016-A	MAIN BOARD, COMPLETE (US, CND)		A-4724-731-A	MAIN BOARD, COMPLETE (US, CND)	
	174	* A-4724-017-A	MAIN BOARD, COMPLETE (AEP, AUS)		A-4724-732-A	MAIN BOARD, COMPLETE (AEP, AUS)	
			ELECTRICAL PARTS LIST			***ELECTRICAL PARTS LIST***	
47		* A-4724-016-A	MAIN BOARD, COMPLETE (US, CND)		A-4724-731-A	MAIN BOARD, COMPLETE (US, CND)	
		* A-4724-017-A	MAIN BOARD, COMPLETE (AEP, AUS)		A-4724-732-A	MAIN BOARD, COMPLETE (AEP, AUS)	
48	J301	1-770-720-11	JACK, PIN 4P		1-784-429-11	JACK, PIN 4P	
	IC302	8-752-893-90	IC CXP84648-019Q		8-752-905-12	IC CXP84648-053Q	
			ACCESSORIES & PACKING MATERIALS			***ACCESSORIES & PACKING MATERIALS***	
50		3-810-765-32	MANUAL, COMMONNESS INSTRUCTION (FOR CONTROL-A1) (ENGLISH)(US,CND,AUS)		3-866-671-11	MANUAL, INSTRUCTION (FOR CONTROL-A1 II) (ENGLISH) (US, AUS)	
		3-810-765-42	MANUAL, COMMONNESS INSTRUCTION (FOR CONTROL-A1) (ENGLISH, FRENCH, GERMAN, SPANISH, DUTCH, SWEDISH, ITALIAN, PORTUGUESE, CHINESE) (AEP)		3-866-671-21	MANUAL, INSTRUCTION (FOR CONTROL-A1 II) (ENGLISH, FRENCH, GERMAN, SPANISH, DUTCH, SWEDISH, ITALIAN, PORTUGUESE) (CND, AEP)	
		3-862-359-11	MANUAL, INSTRUCTION (ENGLISH)		3-866-304-11	MANUAL, INSTRUCTION (ENGLISH)(US, AUS)	
		3-862-359-21	MANUAL, INSTRUCTION (FRENCH, SPANISH, PORTUGUESE) (AEP)		3-866-304-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, SWEDISH) (CND, AEP)	
		3-862-359-31	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN, SWEDISH) (AEP)		3-866-304-31	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN, PORTUGUESE) (AEP)	

COMPACT DISC PLAYER

SONY®

MICROFILM

9-928-920-11

Sony Corporation
Home Audio Company

99E001668-1
Printed in Japan ©1999.5
Published by Quality Assurance Dept.

CDP-CE525

SERVICE MANUAL

US Model
Canadian Model
AEP Model
Australian Model

Model Name Using Similar Mechanism	CDP-CE515
CD Mechanism Type	CDM27H
Base Unit Type	BU-5BD25
Optical Pick-up Type	KSS-213BA/F-NP

SPECIFICATIONS

Compact disc player

Laser — Semiconductor laser (λ = 780 nm)
Emission duration: continuous

Laser output — Max 44.6 µW*
* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up block with 7 mm aperture.

Frequency response — 2 Hz to 20 kHz ±0.5 dB

Signal-to-noise ratio — More than 107 dB

Dynamic range — More than 98 dB

Harmonic distortion — Less than 0.0040%

Channel separation — More than 100 dB

Output

	Jack type	Maximum output level	Load impedance
LINE OUT	Phono jacks	2 V (at 50 kilohms)	Over 10 kilohms
DIGITAL OUT (OPTICAL)	Optical output connector	–18 dBm	Wave length: 660 nm
PHONES	Stereo phone jack	10 mW	32 ohms

General

Power requirements

Where purchased	Power requirements
USA/Canada	120 V AC, 60 Hz
Europe	220 V – 230 V AC, 50/60 Hz
Australia	240 V AC, 50/60 Hz

Power consumption — 14 W

Dimensions (approx.) (w/h/d) — 430 × 120 × 393 mm (17 × 4 3/4 × 15 1/2 in.) incl. projecting parts

Mass (approx.) — 5.4 kg (11 lbs 15 oz)

Supplied accessories

Audio cord (2 phono plugs – 2 phono plugs) (1)
Remote commander (remote) (1)
Sony SUM-3 (NS) batteries (2)
CONTROL A1 cord (1) (supplied for Canadian models only)

Design and specifications are subject to change without notice.

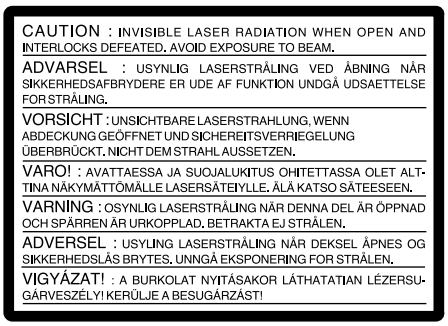
COMPACT DISC PLAYER

MICROFILM

SONY®

Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.


CAUTION : INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. AVOID EXPOSURE TO BEAM.
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.
VORSICHT : UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET UND SICHEREITSVERRIEGELUNG ÜBERBRÜCKT. NICHT DEM STRAHL AUSSETZEN.
VARO! : AVATTAESSA JA SUOJALUKITUS OHITETTASSA OLET ALTTINA NÄKYMÄTTÖMÄLLE LASERSÄTEIYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING : OSYNLIG LASERSTRÅLING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.
ADVERSEL : USYLING LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VIGYÁZAT! : A BURKOLAT NYITÁSAKOR LÁTHATATIAN LÉZERSUGÁRVESZÉLY! KERÜLJE A BESUGÁRZÁST!

The following caution label is located inside of the unit.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:
Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth Ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

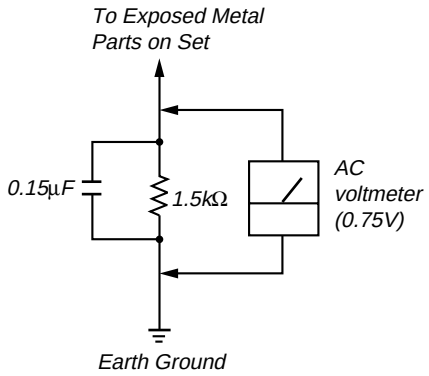
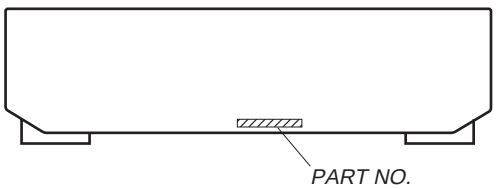


Fig. A. Using an AC voltmeter to check AC leakage.

MODEL IDENTIFICATION — BACK PANEL —



PARTS No.	MODEL
4-997-419-0☐	US
4-997-419-1☐	Canadian
4-997-419-2☐	AEP
4-997-419-3☐	Australian

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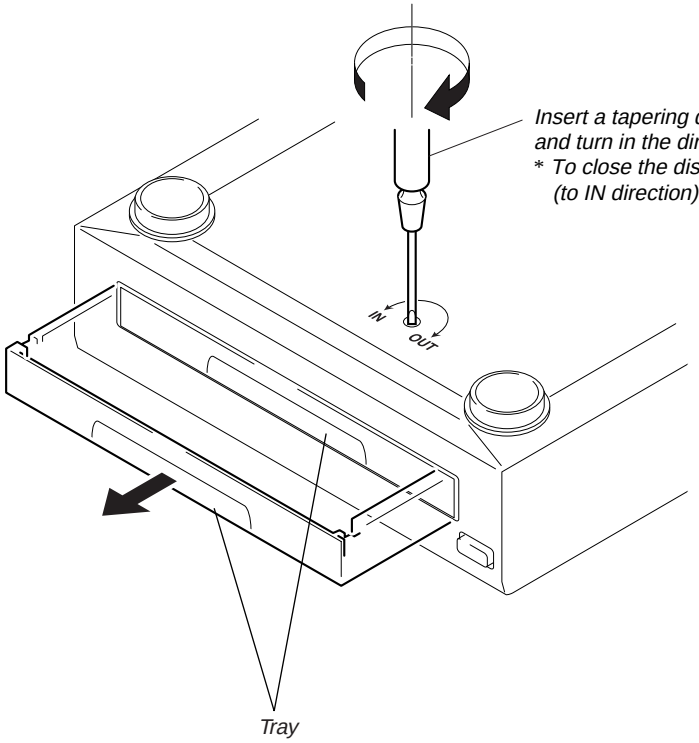
SECTION 1
SERVICING NOTE

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



Insert a tapering driver into the aperture of the unit bottom, and turn in the direction of arrow (to OUT direction).
** To close the disc tray, turn the driver in the reverse direction (to IN direction).*

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

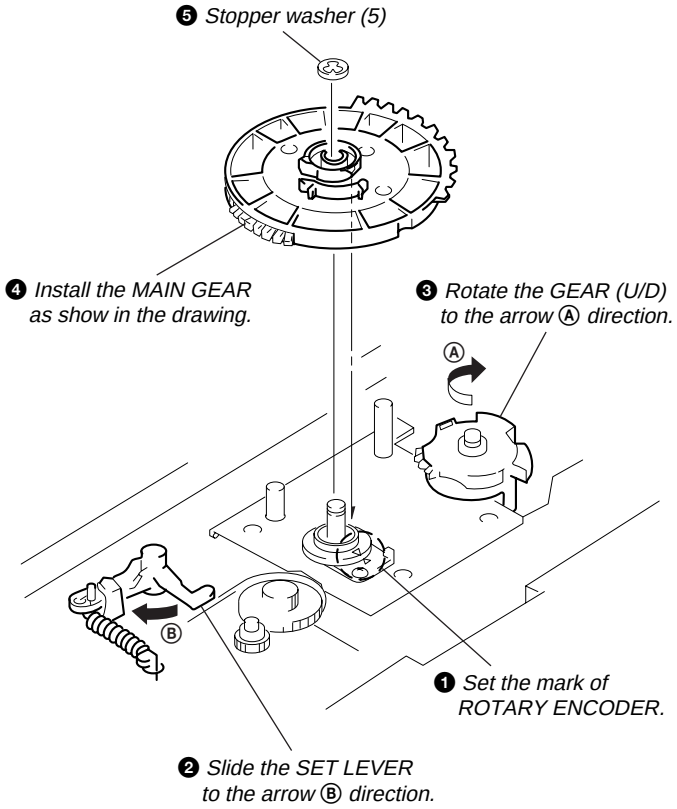
NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

LASER DIODE AND FOCUS SEARCH OPERATION CHECK

Carry out the "S curve check" in "CD section adjustment" and check that the S curve waveform is output two times.

NOTE FOR MAIN GEAR INSTALLATION


❺ Stopper washer (5)
❹ Install the MAIN GEAR as show in the drawing.
❸ Rotate the GEAR (U/D) to the arrow Ⓐ direction.
Ⓐ
Ⓑ
❶ Set the mark of ROTARY ENCODER.
❷ Slide the SET LEVER to the arrow Ⓑ direction.

SHIPMENT MODE

Performed when returning the unit to the customer.
Custom File Erases all custom files and initializes settings.

Procedure:
1. Remove the discs from all trays.
2. While pressing the DISK SKIP button and PROGRAM button, press the I/⏻ button to turn ON the power.
3. "NO DISC" is displayed, indicating that the mode has ended.

Note: "NO DISC" may be displayed even if there are discs on the trays.

CD-TEXT TEST DISC

This unit is able to display the TEXT data (character information) written in the CD on its fluorescent indicator tube.
The CD-TEXT TEST DISC (TGCS-313:4-989-366-01) is used for checking the display.
To check, perform the following procedure.

Checking Method:
1. Set the test disc on a free tray, and chuck the disc.
2. Press the ▶ button and play back the disc.
3. The following will be displayed on the fluorescent indicator tube.
   Display : 1kHz/0 dB/ L&R
4. Rotate ⏮ and ⏭ knob to switch the track. The text data of each track will be displayed.
   For details of the displayed contents for each track, refer to "Table 1 : CD-TEXT TEST DISC TEXT Data Contents" and "Table 2 : CD-TEXT TEST DISC Recorded Contents and Display".

Restrictions in CD-TEXT Display
In this unit, some special characters will not be displayed properly. These will be displayed as a space or a character resembling it. For details, refer to "Table 2 : CD-TEXT DISC Recorded Contents and Display".

Table 1 : CD-TEXT TEST DISC TEXT Data Contents (TRACKS No. 1 to 41:Normal Characters)

TRACK No.	Displayed Contents	TRACK No.	Displayed Contents
1	1kHz/0dB/L&R	22	1kHz/-90dB/L&R
2	20Hz/0dB/L&R	23	Infinity Zero w/o emphasis//L&R
3	40Hz/0dB/L&R	24	Infinity Zero with emphasis//L&R
4	100Hz/0dB/L&R	25	400Hz+7kHz(4:1)/0dB/L&R
5	200Hz/0dB/L&R	26	400Hz+7kHz(4:1)/-10dB/L&R
6	500Hz/0dB/L&R	27	19kHz+20kHz(1:1)/0dB/L&R
7	1kHz/0dB/L&R	28	19kHz+20kHz(1:1)/-10dB/L&R
8	5kHz/0dB/L&R	29	100Hz/0dB/L*
9	7kHz/0dB/L&R	30	1kHz/0dB/L*
10	10kHz/0dB/L&R	31	10kHz/0dB/L*
11	16kHz/0dB/L&R	32	20kHz/0dB/L*
12	18kHz/0dB/L&R	33	100Hz/0dB/R*
13	20kHz/0dB/L&R	34	1kHz/0dB/R*
14	1kHz/0dB/L&R	35	10kHz/0dB/R*
15	1kHz/-1dB/L&R	36	20kHz/0dB/R*
16	1kHz/-3dB/L&R	37	100Hz Squer Wave//L&R
17	1kHz/-6dB/L&R	38	1kHz Squer Wave//L&R
18	1kHz/-10dB/L&R	39	1kHz w/emphasis/-0.37dB/L&R
19	1kHz/-20dB/L&R	40	5kHz w/emphasis/-4.53dB/L&R
20	1kHz/-60dB/L&R	41	16kHz w/emphasis/-9.04dB/L&R
21	1kHz/-80dB/L&R		

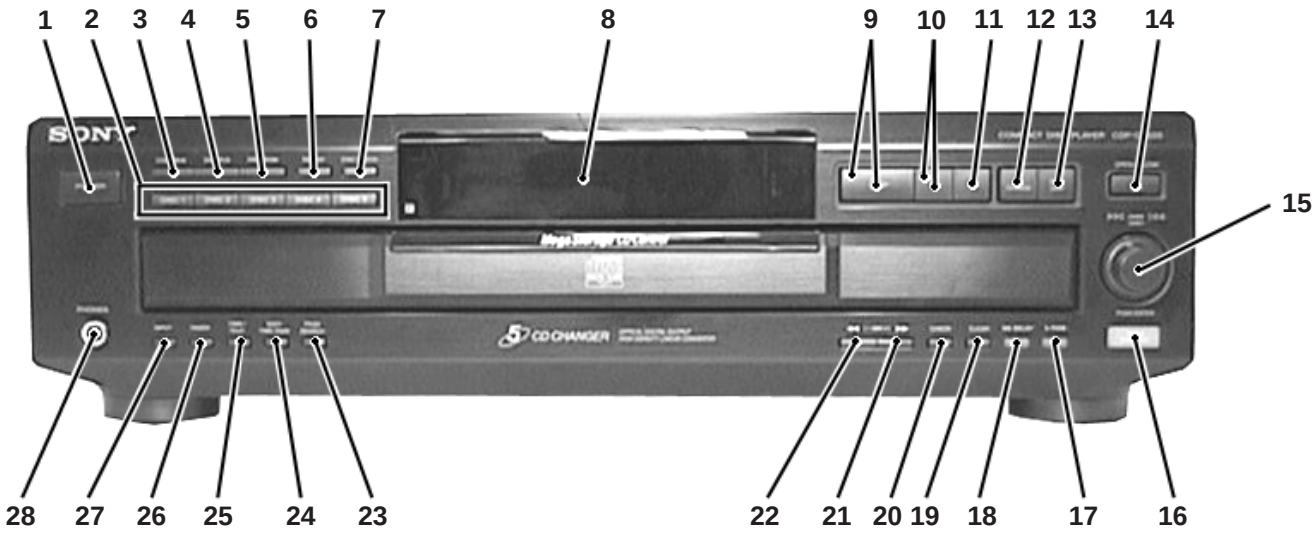
NOTE : The contents of Track No. 1 to 41 are the same as those of the current TEST DISC-their titles are displayed.

Table 2: CD-TEXT TEST DISC Recorded Contents and Display
(In this unit, some special characters cannot be displayed. This is no a fault.)

TRACK No.	Recorded contents	Display
42	! " # $ % & ´ (21h to 27h)1kHz 0dB L&R	← All the same
43	( ) * + , – . / (28h to 2Fh)	← All the same
44	0 1 2 3 4 5 6 7 (30h to 37h)	← All the same
45	8 9 : ; < = > ? (38h to 3Fh)	← All the same
46	@ A B C D E F G (40h to 47h)	← All the same
47	H I J K L M N O (48h to 4Fh)	← All the same
48	P Q R S T U V W (50h to 57h)	← All the same
49	X Y Z [¥] ^ _ (58h to 5Fh)	X Y Z [\ ] ^ _ (58····
50	` a b c d e f g (60h to 57h)	ll a b c d e f g (60····
51	h i j k l m n o (68h to 6Fh)	← All the same
52	p q r s t u v w (70h to 77h)	← All the same
53	x y z { l } ~ ▌ (78h to 7Fh)	x y z { l } ¯ ▌ (78····
54	▌ i ¢ £ ¤ ¥ ¦ § (A0h to A7h) 8859-1	i ¤ § (A0···· ▌ ¢ £ ¥ ¦ are not displayed
55	♪ ⓒ ª « ¬ Ⓟ Ⓡ ¯ (A8h to AFh)	¯ (A8···· ♪ ⓒ ª « ¬ Ⓟ Ⓡ are not displayed
56	· ± ² ³ ´ µ ¶ • (B0h to B7h)	± ´ µ (B0···· · ² ³ ¶ • are not displayed
57	† ¹ º » ¼ ½ ¾ ¿ (B8h to BFh)	¿ (B8···· † ¹ º » ¼ ½ ¾ are not displayed
58	À Á Â Ã Ä Å Æ Ç (C0h to C7h)	à á â ã Ä Å Æ Ç (C0····
59	È É Ê Ë Ì Í Î Ï (C8h to CFh)	è é ê ë ì í î ï (C8····
60	Ð Ñ Ò Ó Ô Õ Ö × (D0h to C7h)	Ð Ñ ò ó ô O Ö × (D0····
61	Ø Ù Ú Û Ü Ý Þ ß (D8h to DFh)	Ø ù ú û ü Y ß (D8····Þ is not displayed
62	à á â ã ä å æ ç (E0h to E7h)	← All the same
63	è é ê ë ì í î ï (E8h to FFh)	← All the same
64	ð ñ ò ó ô õ ö ÷ (F0h to F7h)	ñ ò ó ô o ö ÷ (F0···ð is not displayed
65	ø ù ú û ü ý þ ÿ (F8h to FFh)	ø ù ú û ü y y (F8····þ is not displayed
66	No.66	← All the same
67	No.67	← All the same
to	to	to
99	No.99	← All the same

SECTION 2
GENERAL

Front Panel



LOCATION OF PARTS AND CONTROLS

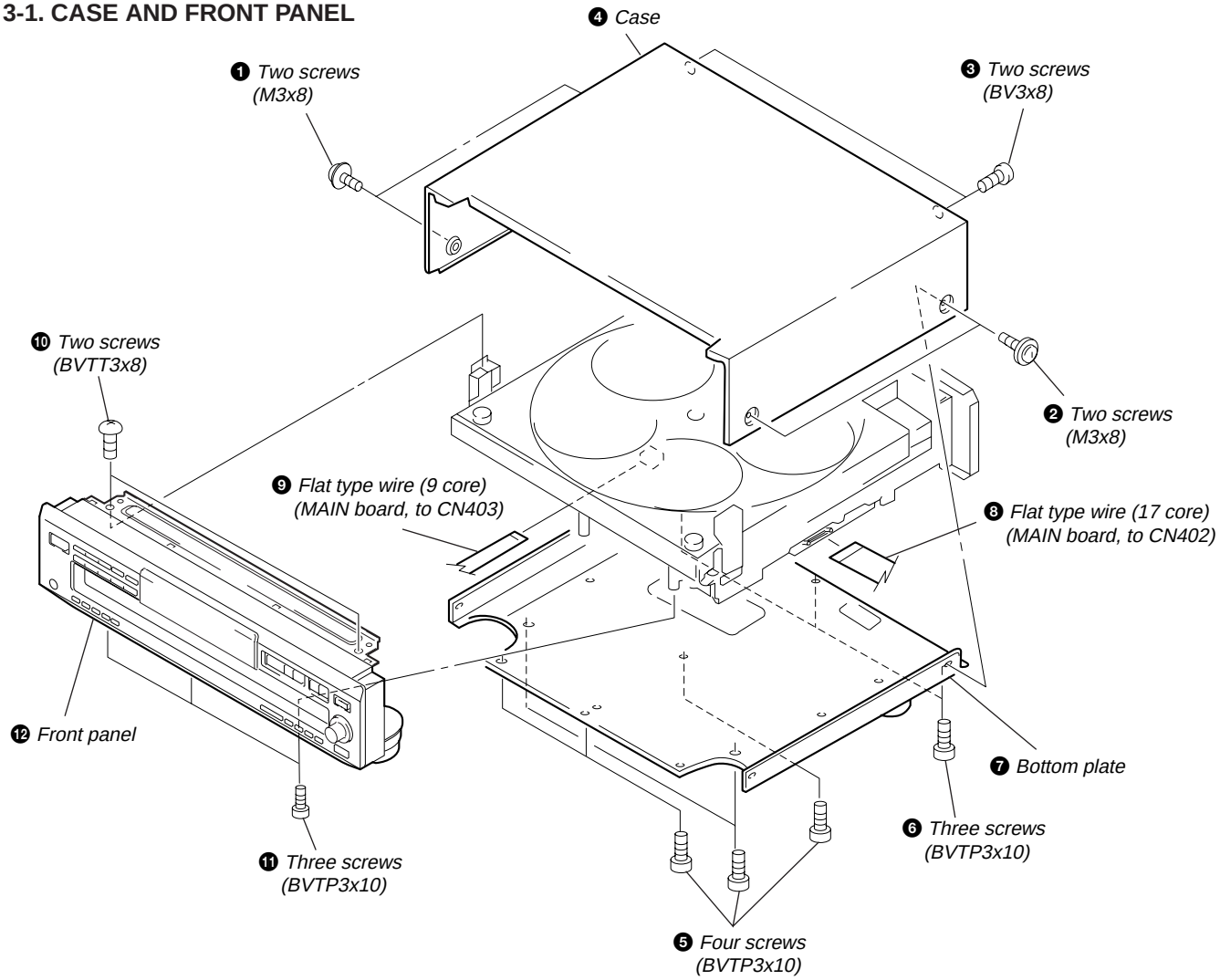
1 I/⏻ button
2 DISC 1-5 button
3 CONTINUE button
4 SHUFFLE button
5 PROGRAM button
6 REPEAT button
7 DISC CHECK button
8 Display window
9 ▷ (PLAY) button and indicator
10 ❚❚ (PAUSE) button and indicator
11 ■ (STOP) button
12 EX-CHANGE button
13 DISC SKIP button
14 ⏏ OPEN/CLOSE button
15 ⏮ AMS* ⏭ /(DISC)/(PUSH ENTER) knob
16 MEGA CONTROL button and indicator
17 X-FADE button and indicator
18 NO DELAY button and indicator
19 CLEAR button
20 CHECK button
21 ⏭ (– AMS* +) button
22 ⏮ (– AMS* +) button
23 PEAK SEARCH button
24 EDIT/TIME FADE button
25 TIME/TEXT button
26 FADER button
27 INPUT button
28 PHONES jack

* AMS is abbreviation for Automatic Music Sensor.

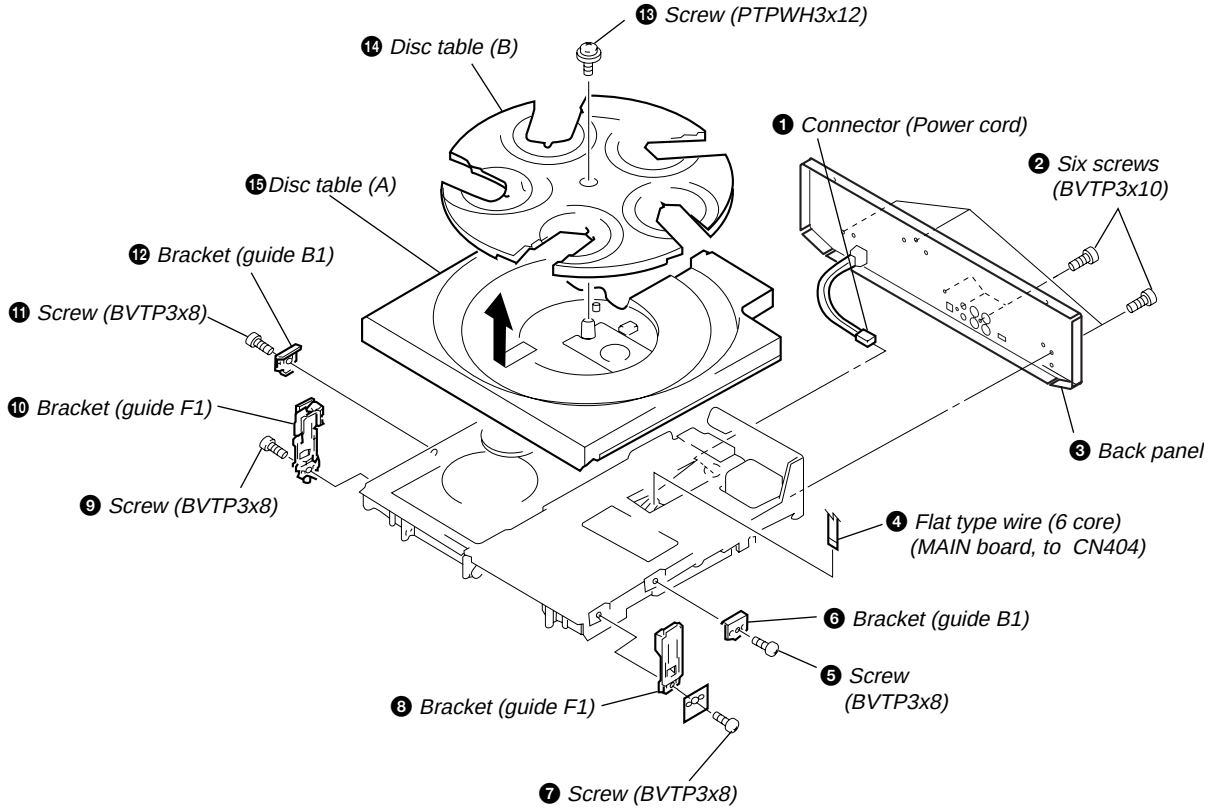
SECTION 3
DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

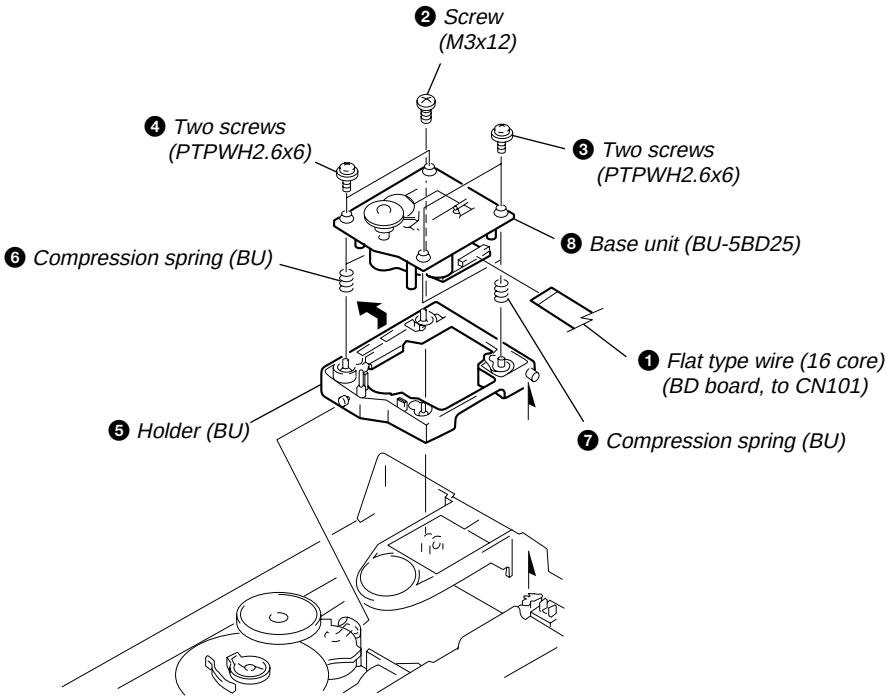
3-1. CASE AND FRONT PANEL


❹ Case
❶ Two screws (M3x8)
❸ Two screws (BV3x8)
❿ Two screws (BVTT3x8)
❷ Two screws (M3x8)
❾ Flat type wire (9 core) (MAIN board, to CN403)
❽ Flat type wire (17 core) (MAIN board, to CN402)
⓬ Front panel
❼ Bottom plate
⓫ Three screws (BVTP3x10)
❻ Three screws (BVTP3x10)
❺ Four screws (BVTP3x10)

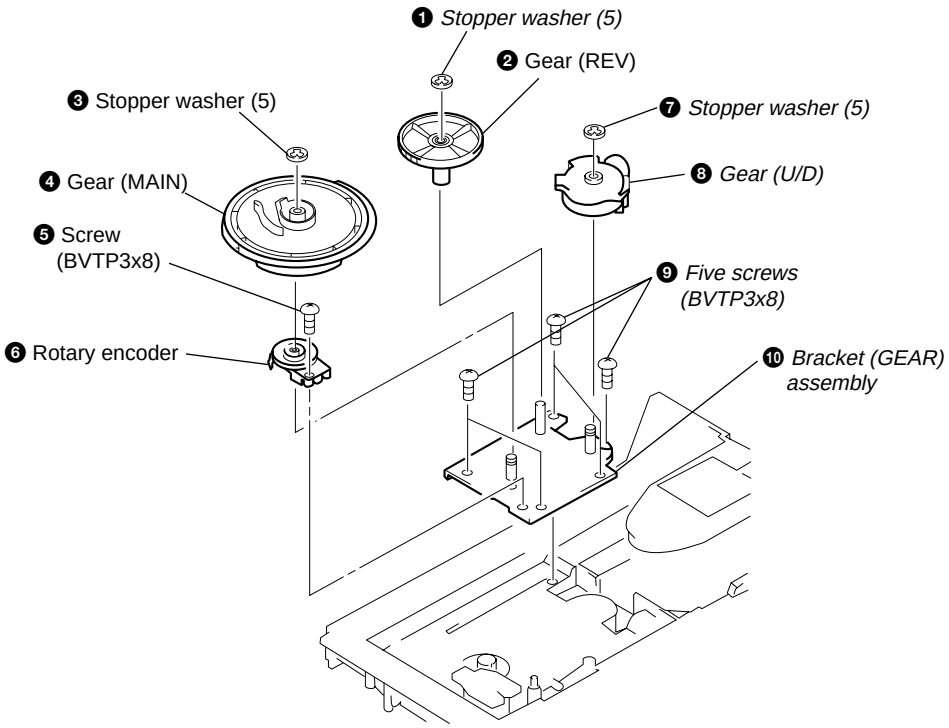
3-2. BACK PANEL AND DISC TABLE


⓭ Screw (PTPWH3x12)
⓮ Disc table (B)
❶ Connector (Power cord)
❷ Six screws (BVTP3x10)
⓯ Disc table (A)
⓬ Bracket (guide B1)
⓫ Screw (BVTP3x8)
❿ Bracket (guide F1)
❸ Back panel
❾ Screw (BVTP3x8)
❹ Flat type wire (6 core) (MAIN board, to CN404)
❻ Bracket (guide B1)
❺ Screw (BVTP3x8)
❽ Bracket (guide F1)
❼ Screw (BVTP3x8)

3-3. BASE UNIT



3-4. BRACKET (GEAR) ASSEMBLY



SECTION 4
TEST MODE

ADJ MODE

NOTE : This mode cannot be performed without a general remote commander.

1. Chuck the CD first, and then turn OFF the power.
2. Short-circuit the test point (TP1:ADJ) of the main board and ground with a lead wire.
3. Press the I/⏻ button to turn ON the power.
   The CD is played back automatically and the ADJ mode is set.
4. To exit the mode, press the I/⏻ button to turn OFF the power.

- Prohibits high speed search during accessing
- Ignores even if GFS becomes L

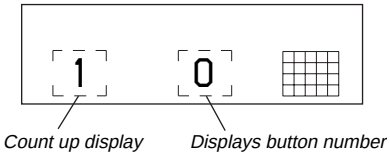
ADJ Mode Special Function Table

Button	Function
3	Tracking servo, sled servo OFF
8	Tracking servo, sled servo ON

* Set the COMMAND MODE switch to CD1.

FLUORESCENT INDICATOR TUBE, LED ALL LIT, AND KEY CHECK MODE

1. Short-circuit the test (TP2:AFADJ) of the main board and ground with a lead wire.
2. Press the I/⏻ button to turn ON the power.
   The whole fluorescent indicator tube lights up.
   Nothing will be displayed when the SRAM is faulty or improperly soldered.
3. All buttons have individual button numbers.
   When a button is pressed, the button number is counted up and displayed.



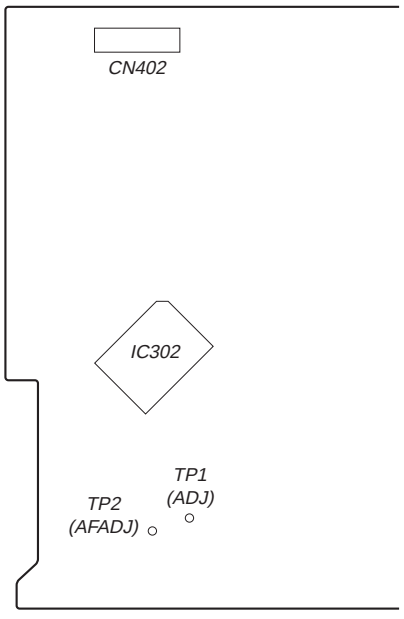
When remote controller signals are received, "RM ✻✻" will be displayed.
(✻✻ are the numbers corresponding to the remote controller keys.)
When using the remote controller, switch the COMMAND MODE switch to CD1.

4. To exit the mode, press the I/⏻ button to turn OFF the power.

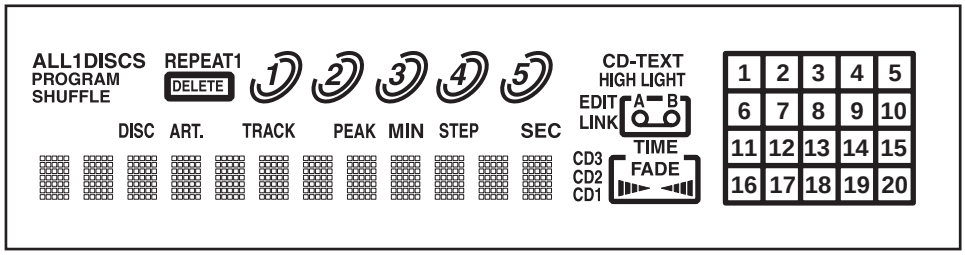
Buttons and Corresponding Button Numbers

Button	Button Number or Display
CONTINUE	20
SHUFFLE	21
PROGRAM	22
REPEAT	31
DISC CHECK	30
DISC1	25
DISC2	26
DISC3	27
DISC4	28
DISC5	29
▷ (PLAY)	Partial lighting 1 (Grid check)
❚❚ (PAUSE)	5
■ (STOP)	Partial lighting 2 (Segment check)
EX-CHANGE	3
DISC SKIP	2
⏏ OPEN/CLOSE	All lit (LED lighting)
AMS (button)	0
AMS (knob)	When rotated clockwise: The music calendar numerals light up in ascending order. When rotated counterclockwise: The music calendar numerals light up in descending order.
MEGA CONTROL	14
X-FADE	8
NO DELAY	9
CLEAR	10
CHECK	11
▶▶	12
◀◀	13
PEAK SEARCH	16
EDIT/TIME FADE	17
TIME/TEXT	18
FADER	24
INPUT	19

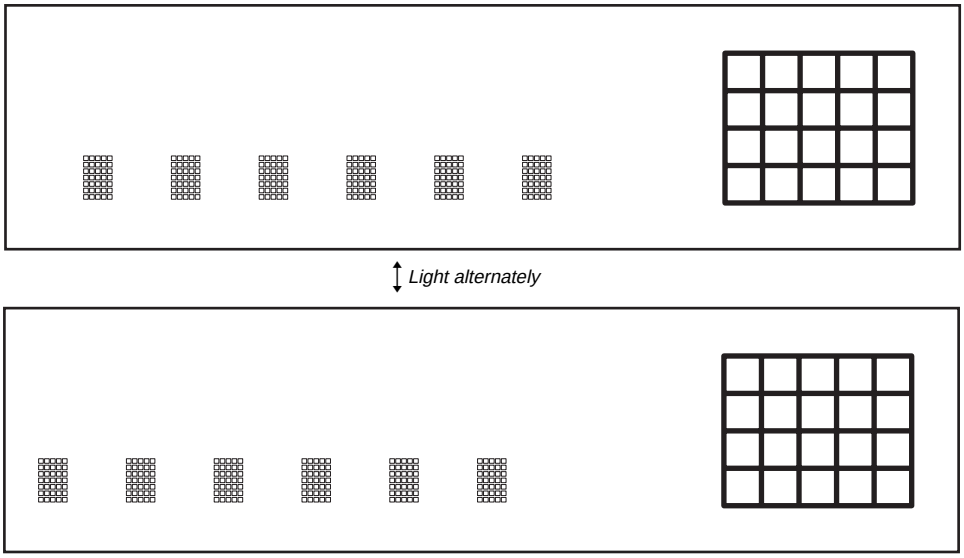
[MAIN BOARD] – CONDUCTOR SIDE –



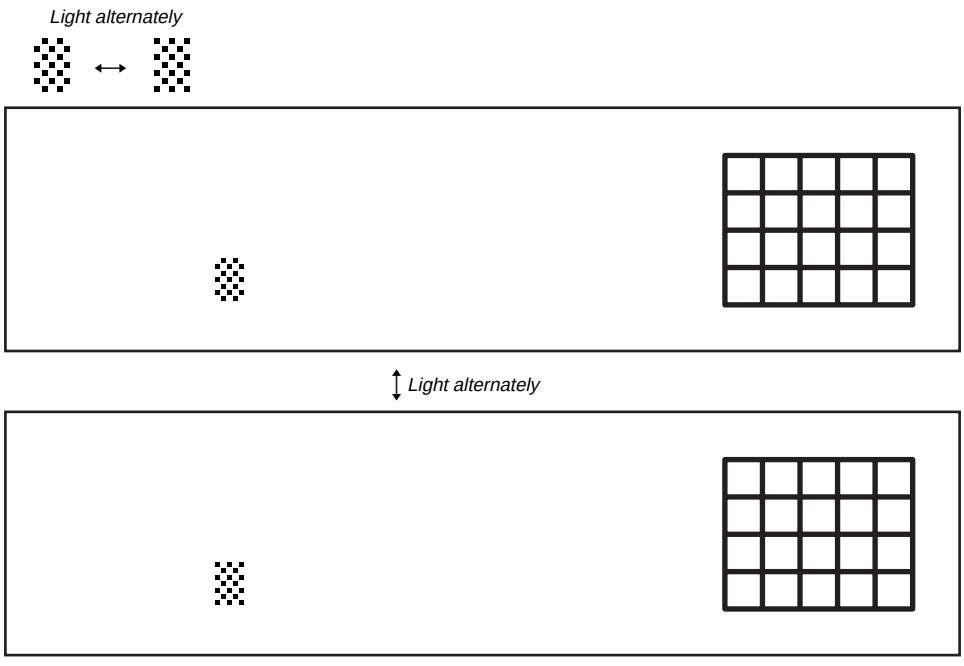
All lit



Partial lighting 1



Partial lighting 2



AGING MODE

This unit is equipped with an aging mode to check operations of the mechanism deck.

- When faults occur:
  Aging stops, and the state when aging stopped is displayed on the fluorescent display tube.

- When no fault has occurred:
  Aging is continued repeatedly.

Note: Do not use the test disc when performing aging.
Aging will not be performed properly if discs with tracks shorter than 4 seconds are used.

Aging method 1

(When using the aging mode remote controller (J-2501-123-A):

1. Set the COMMAND MODE switch to CD1.
2. Press the [I/⏻] button and turn ON the power.
3. Set discs on all trays.
   (More than two discs if five are not available.)
4. Press the AGING START button of the aging remote controller.
5. Aging starts and the message shown in Fig. 1 is displayed on the fluorescent display tube.
6. To end, press the [I/⏻] button.

Aging method 2

(When no aging mode remote controller):

1. Press the [I/⏻] button and turn ON the power.
2. Set discs on all trays.
   (More than two discs if five are not available.)
3. Press the [⏏ OPEN/CLOSE] button, [CHECK] button, and [DISC 1] button in this order together.
4. Aging starts and the message shown in Fig. 1 is displayed on the fluorescent display tube.
5. To end, press the [I/⏻] button.

Fig. 1 Aging Operations and Their Messages

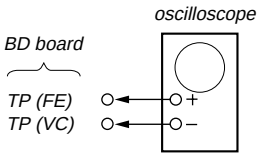
Code No.	State	Display when Normal	Display when Abnormal
1	TOC reading	AGING 1	AGING NG1
2	Accessing last track	AGING 2	AGING NG2
3	Playing back last track (3 seconds)	Counter display	AGING NG3
4	EX-CHANGE (Tray opened while chucking)	AGING 4	AGING NG4
5	DISC SKIP (Disc tray rotated)	AGING 5	AGING NG5
6	CLOSE (Tray closed)	AGING 6	AGING NG6
7	Accessing first track	AGING 7	AGING NG7
8	Playing back first track (3 seconds)	Counter display	AGING NG8
9	OPEN (Tray opened)	AGING 9	AGING NG9
A	DISC SKIP (Disc tray rotated, and next disc was selected)	AGING A	AGING NGA
0	CLOSE (Tray closed)	AGING 0	AGING NG0

The discs are selected in the order of DISC 1 ⟶ DISC 2 ⟶ DISC 3 ⟶ DISC 4 ⟶ DISC 5 ⟶ DISC 1 ⟶ .... Empty trays are skipped.

SECTION 5
ELECTRICAL BLOCK CHECKING

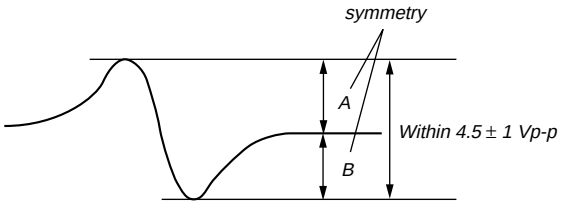
Note:
1. CD Block is basically designed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure :
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) by lead wire.
3. Connect both ends of TP R151 of the BD board to the lead wire.
4. Turn Power switch on.
5. Put disc (YEDS-18) in and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
6. Check the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 4.5 ± 1 Vp-p.

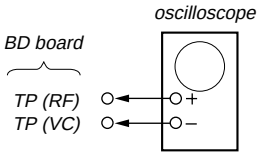
S-curve waveform



7. After check, remove the lead wire connected in step 2 and 3.

Note :
- Try to measure several times to make sure than the ratio of A : B or B : A is more than 10 : 7.
- Take sweep time as long as possible and light up the brightness to obtain best waveform.

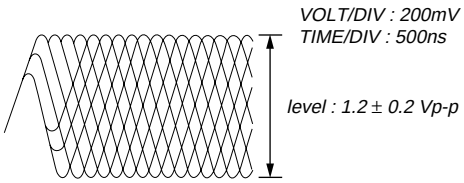
RF Level Check



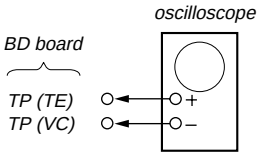
Procedure :
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

Note:
A clear RF signal waveform means that the shape "◊" can be clearly distinguished at the center of the waveform.

RF signal waveform

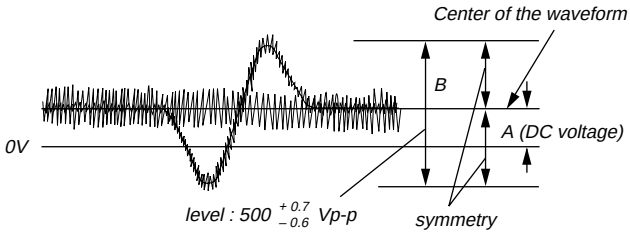


E-F Balance (1 Track Jump) Check (Without general remote commander)

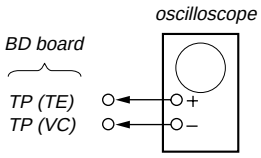


Procedure :
1. Connect oscilloscpe to test point TP (TE) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in to play the number five track.
4. Press the ▮▮ (Pause) button. (Becomes the 1 track jump mode)
5. Check the level B of the oscilliscope's waveform and the A (DC voltage) of the center of the Traverse waveform.
   Confirm the following :
   A/B x 100 = less than ± 22%

1 track jump waveform



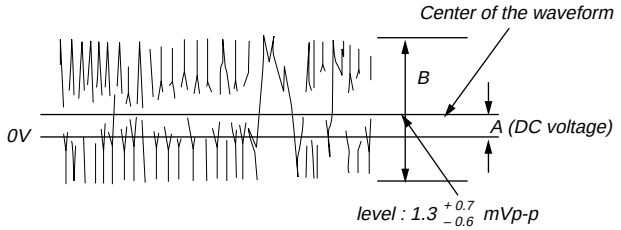
E-F Balance Check (With general remote commander)



Procedure :
1. Connect the test point TP1 (ADJ) on MAIN board to the ground with a lead wire.
2. Connect oscilloscpe to test point TP (TE) on BD board.
3. Set the COMMAND MODE switch to CD1.
4. Turn the Power switch on to set the ADJ mode.
5. Put disc (YEDS-18) in to play the number five track.
6. Press the 3 button. (The tracking servo and the sledding servo are turned OFF.)

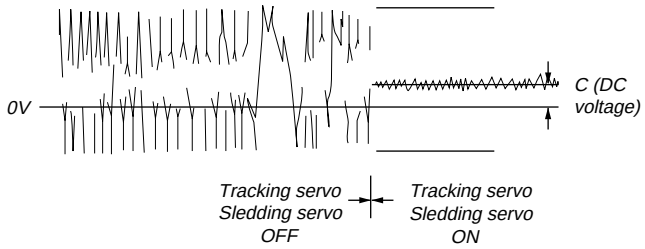
7. Check the level B of the oscilliscope's waveform and the A (DC voltage) of the center of the Traverse waveform.
   Confirm the following :
   A/B x 100 = less than ± 22%

Traverse waveform



8. Press the [8] button. (The tracking servo and sledding servo are turned ON.) Confirm the C (DC voltage) is almost equal to the A (DC voltage) is step 7.

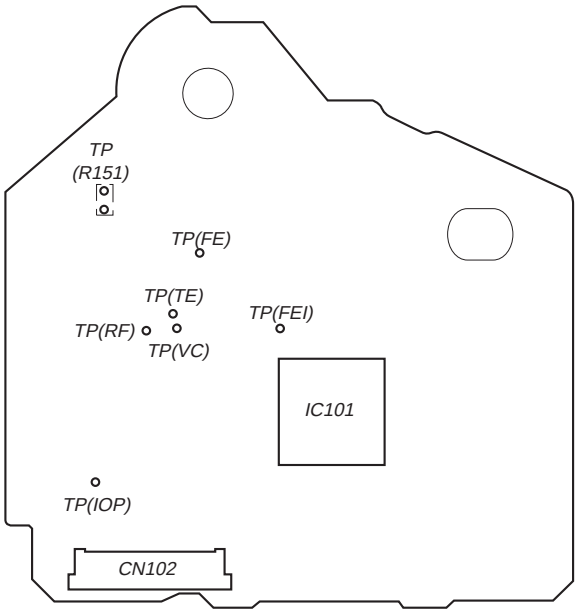
Traverse waveform



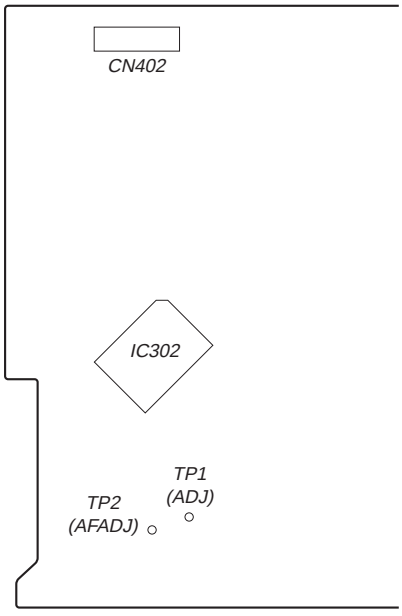
9. Disconnect the lead wire of TP1 (ADJ) connected in step 1.

Adjustment Location :

[BD BOARD] – SIDE A –

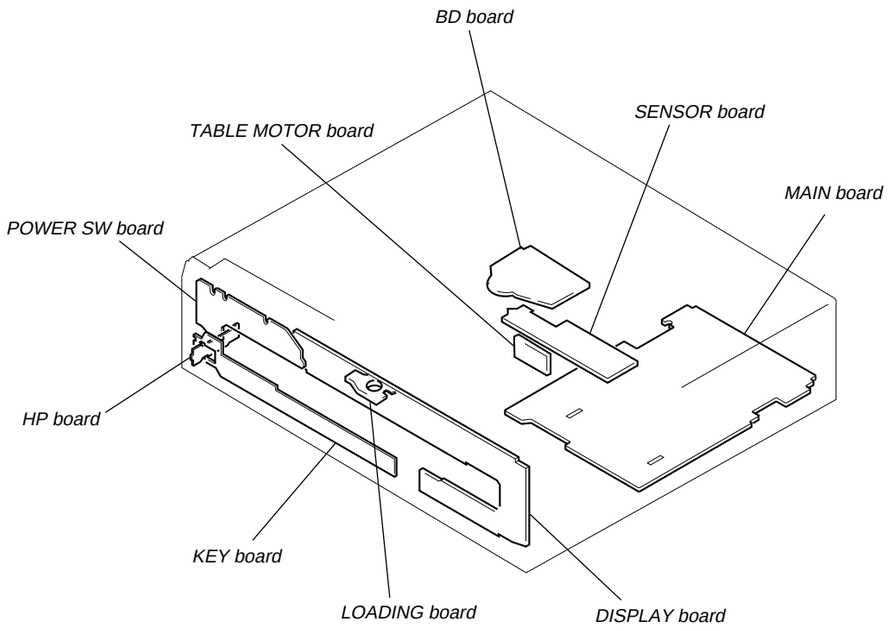


[MAIN BOARD] – CONDUCTOR SIDE –



SECTION 6
DIAGRAMS

6-1. CIRCUIT BOARDS LOCATION



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For schematic diagrams.

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

- B+ : B+ Line.
- B− : B– Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : STOP
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD
  ⇛ : digital out

For printed wiring boards.

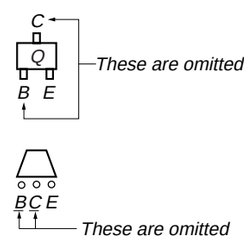
Note:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ○ : Through hole.
- ▒ : Pattern from the side which enables seeing.

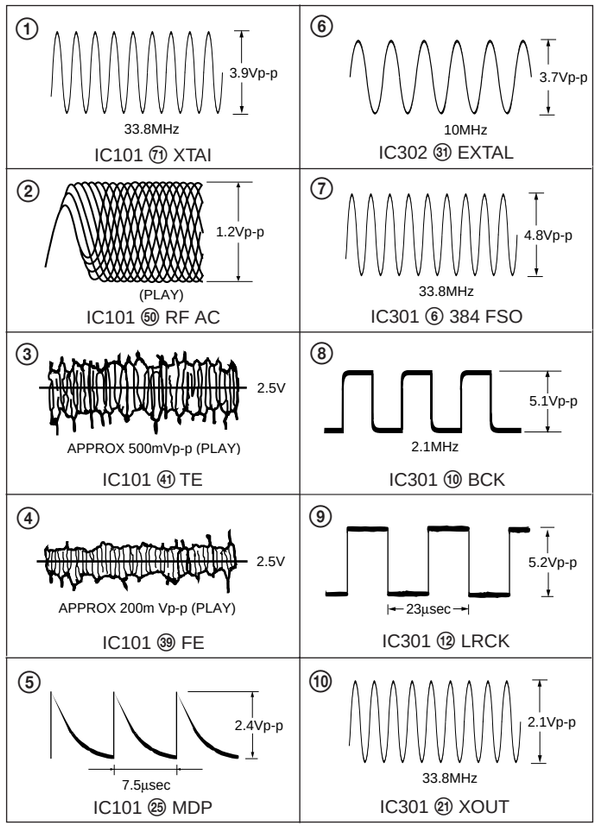
(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

- **Indication of transistor**

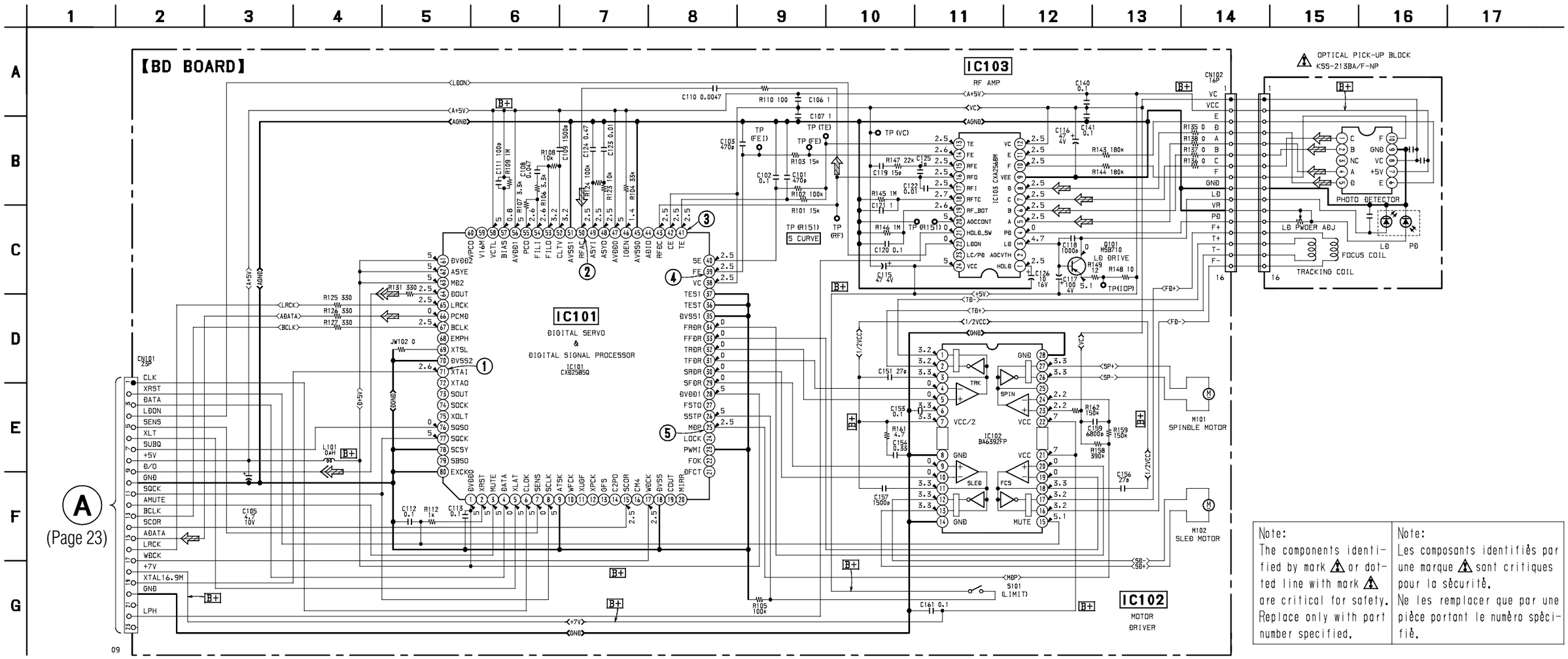


WAVEFORMS



6-2. SCHEMATIC DIAGRAM – BD SECTION –

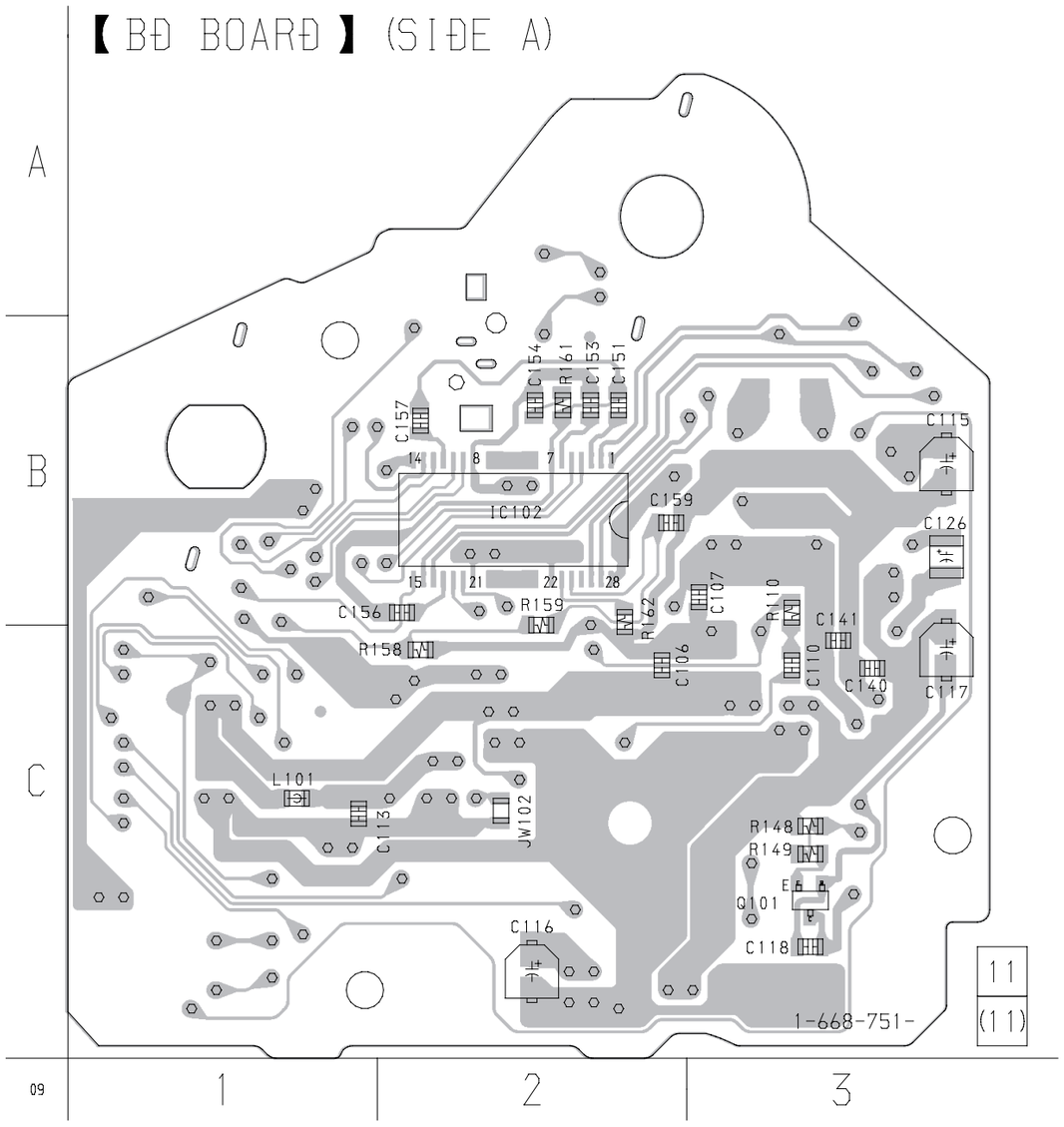
- See page 16 for Waveforms.
- See page 33 for IC Pin Functions.
- See page 37 for IC Block Diagrams.

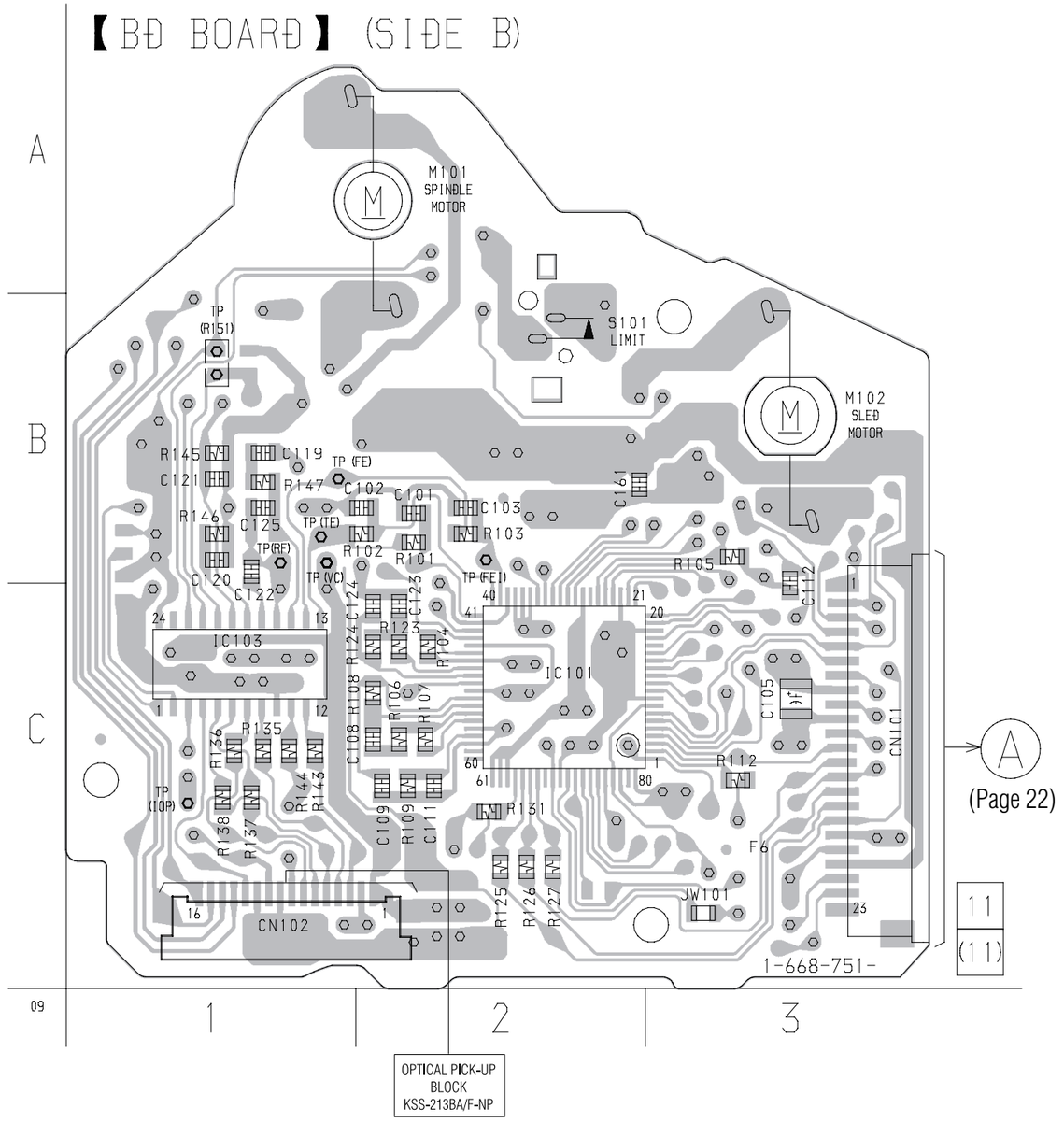


Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

6-3. PRINTED WIRING BOARD – BD SECTION –

• See page 15 for Circuit Boards Location.





• Semiconductor Location

Ref. No.	Location
IC102	B-2
Q101	C-3

• Semiconductor Location

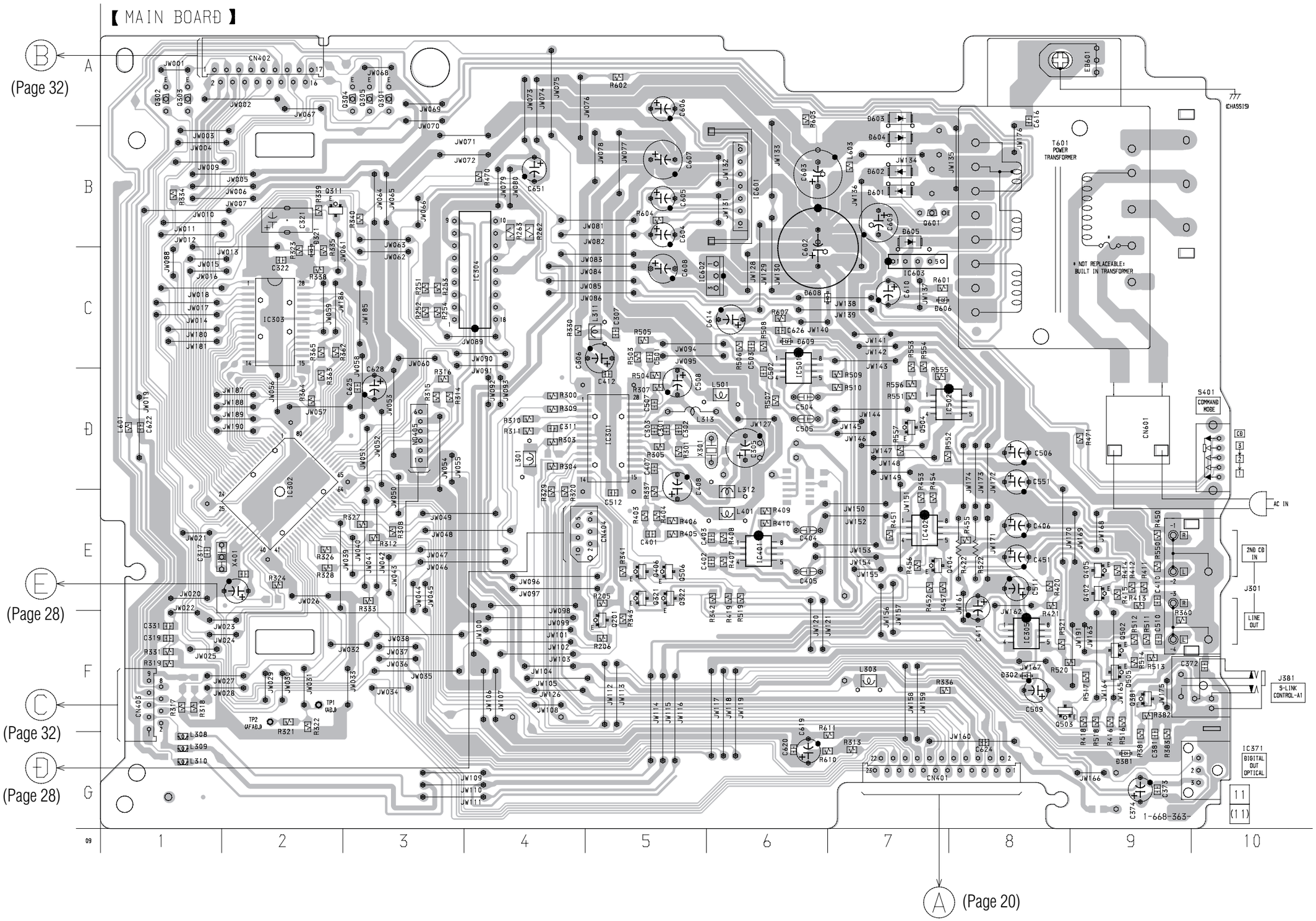
Ref. No.	Location
IC101	C-2
IC103	C-1

6-4. PRINTED WIRING BOARD – MAIN SECTION –

• See page 15 for Circuit Boards Location.

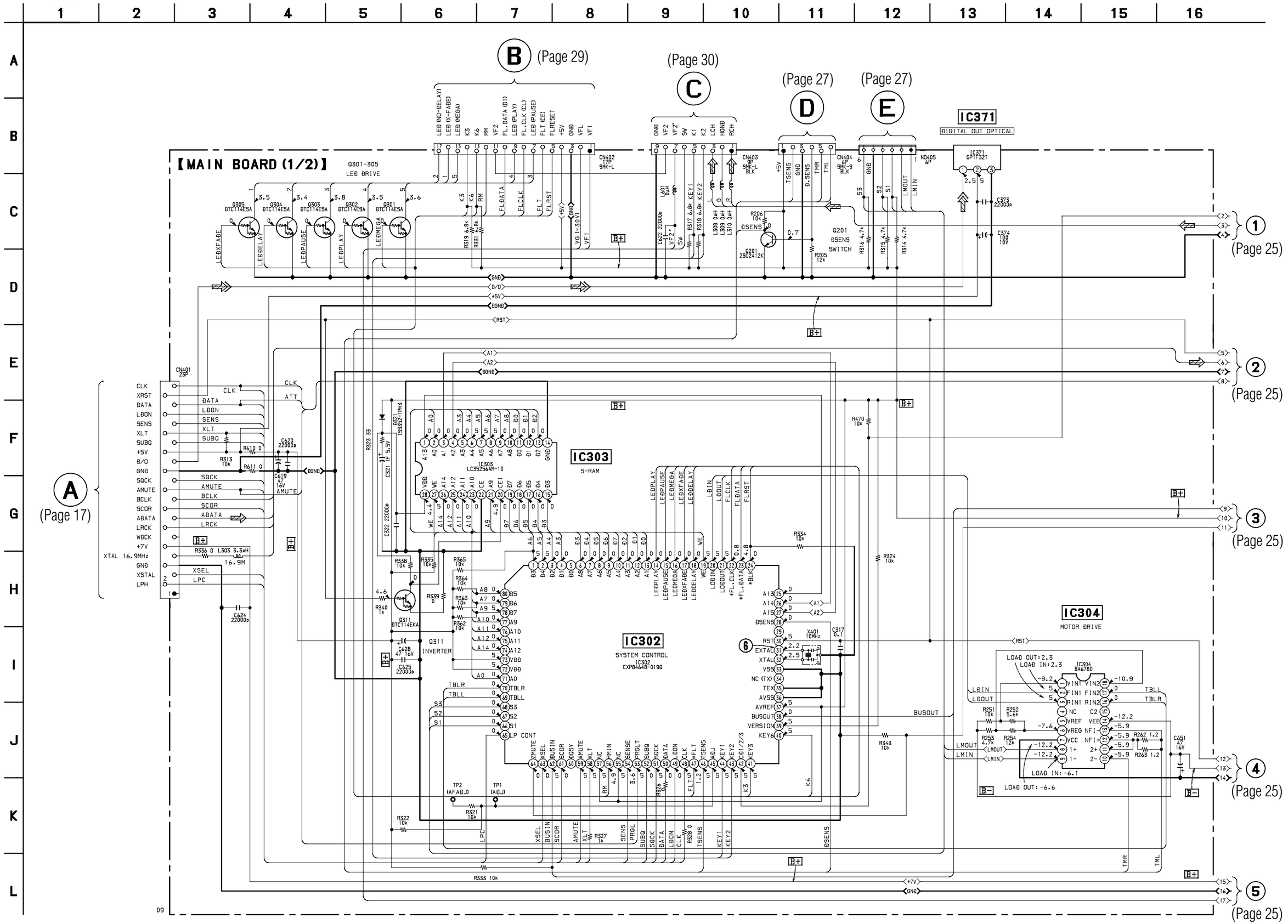
• **Semiconductor Location**

Ref. No.	Location
D302	F-8
D321	C-2
D381	G-9
D601	B-7
D602	B-7
D603	A-7
D604	B-7
D605	B-7
D606	C-7
D608	C-7
D609	C-6
IC301	D-5
IC302	D-2
IC303	C-2
IC304	C-4
IC305	F-8
IC371	G-10
IC401	E-6
IC402	E-7
IC501	C-6
IC502	D-8
IC601	B-6
IC602	C-6
IC603	C-7
Q201	F-5
Q301	A-3
Q302	A-1
Q303	A-1
Q304	A-3
Q305	A-3
Q311	B-2
Q321	E-5
Q322	E-5
Q381	F-9
Q402	E-9
Q404	E-7
Q405	E-9
Q406	E-5
Q502	F-9
Q503	F-8
Q504	D-7
Q505	F-9
Q506	E-5
Q601	B-7



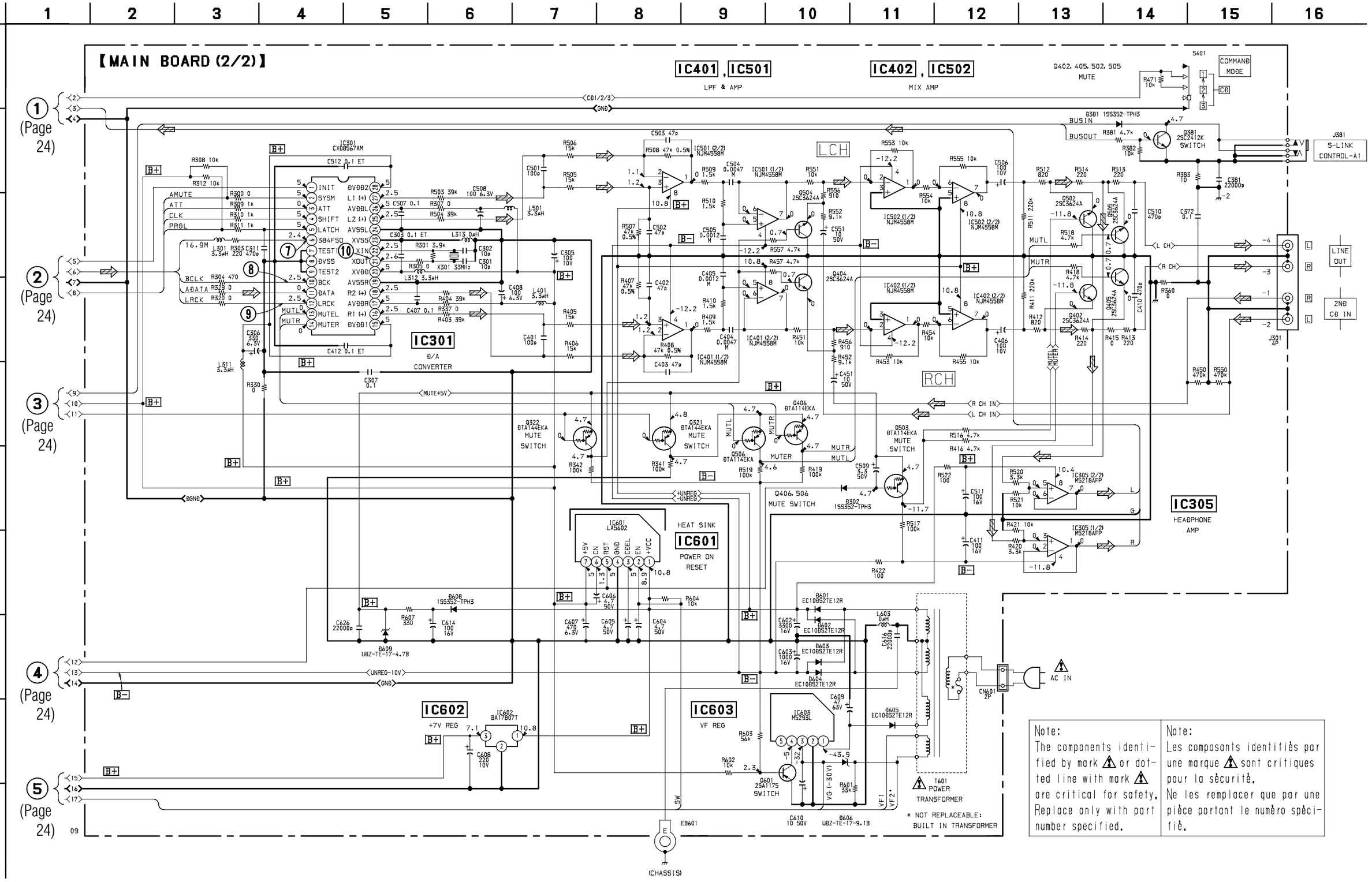
6-5. SCHEMATIC DIAGRAM – MAIN (1/2) SECTION –

- **See page 16 for Waveforms.**
- **See page 35 for IC Pin Functions.**
- **See page 39 for IC Block Diagrams.**

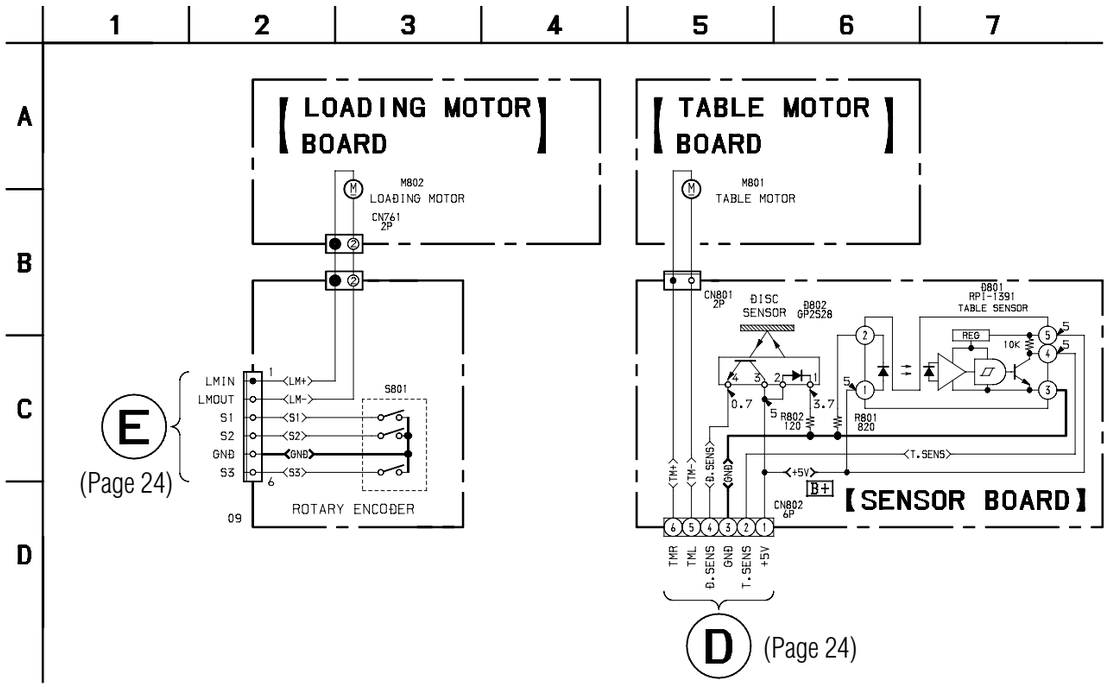


6-6. SCHEMATIC DIAGRAM – MAIN (2/2) SECTION –

- See page 16 for Waveforms.
- See page 21 for Printed Wiring Board.
- See page 39 for IC Block Diagrams.

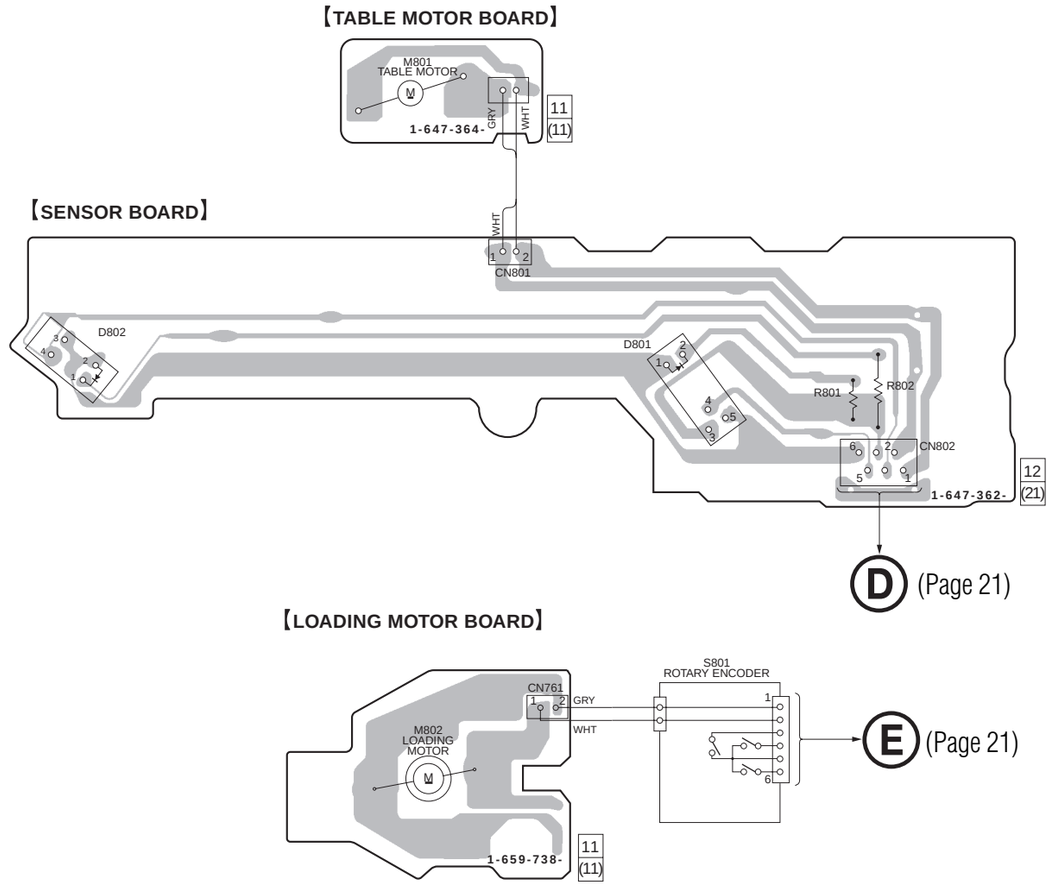


6-7. SCHEMATIC DIAGRAM – MOTOR SECTION –

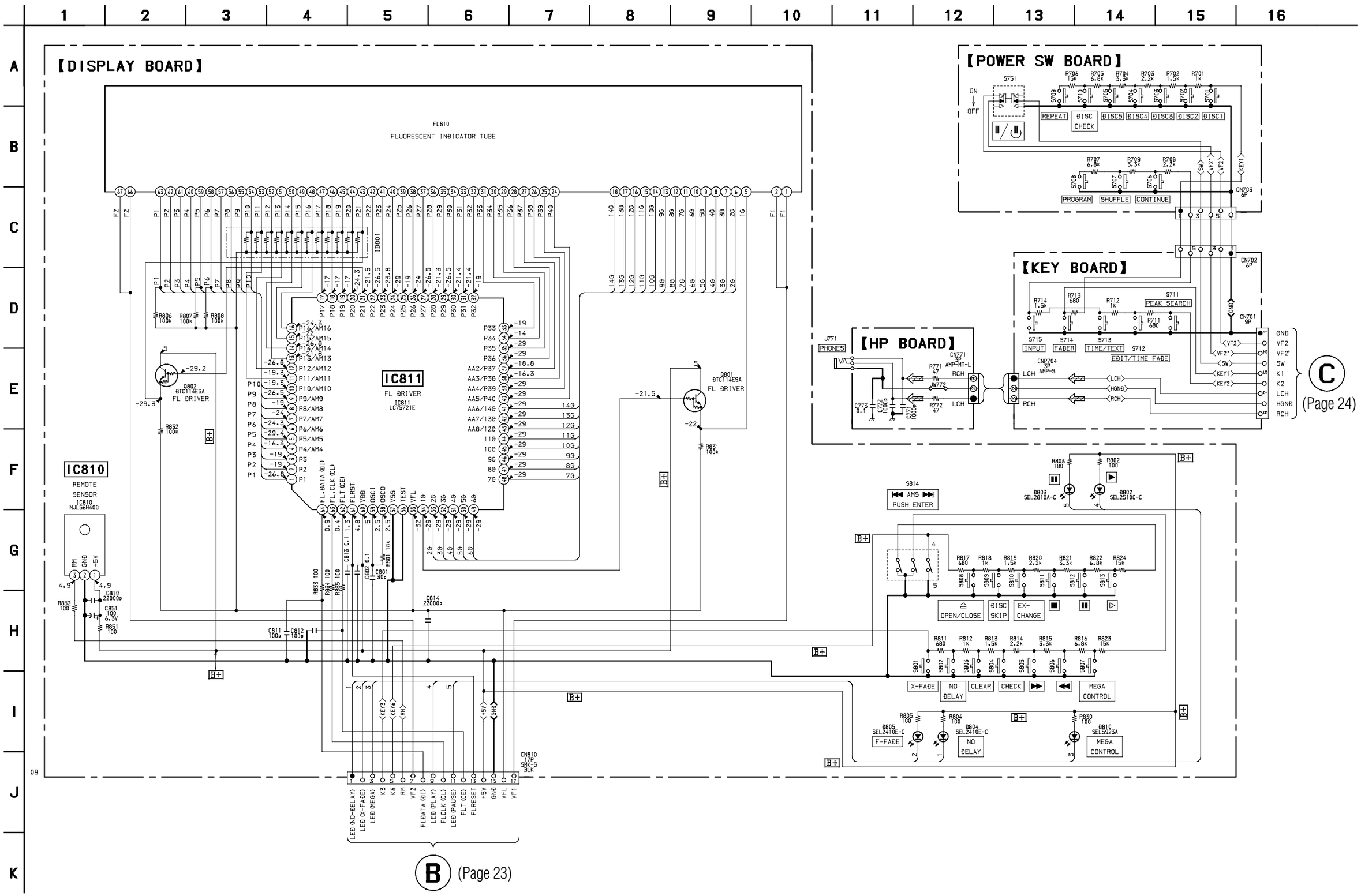


6-8. PRINTED WIRING BOARD – MOTOR SECTION –

• See page 15 for Circuit Boards Location.



6-9. SCHEMATIC DIAGRAM – PANEL SECTION –



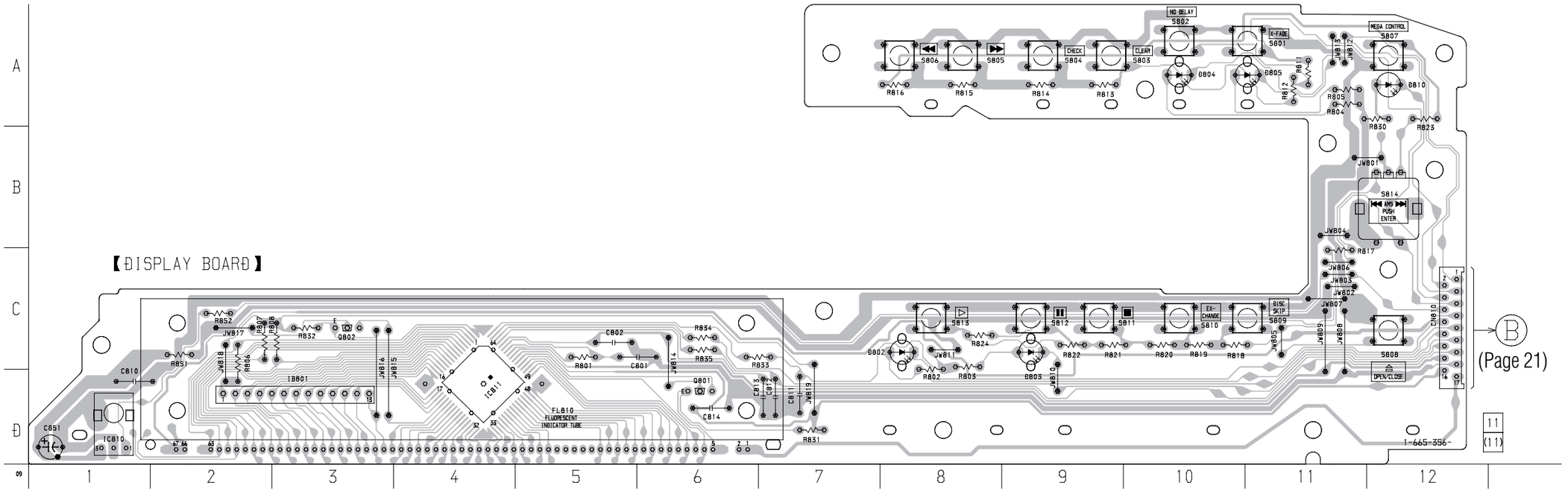
6-10. PRINTED WIRING BOARD – PANEL SECTION –

• See page 15 for Circuit Boards Location.

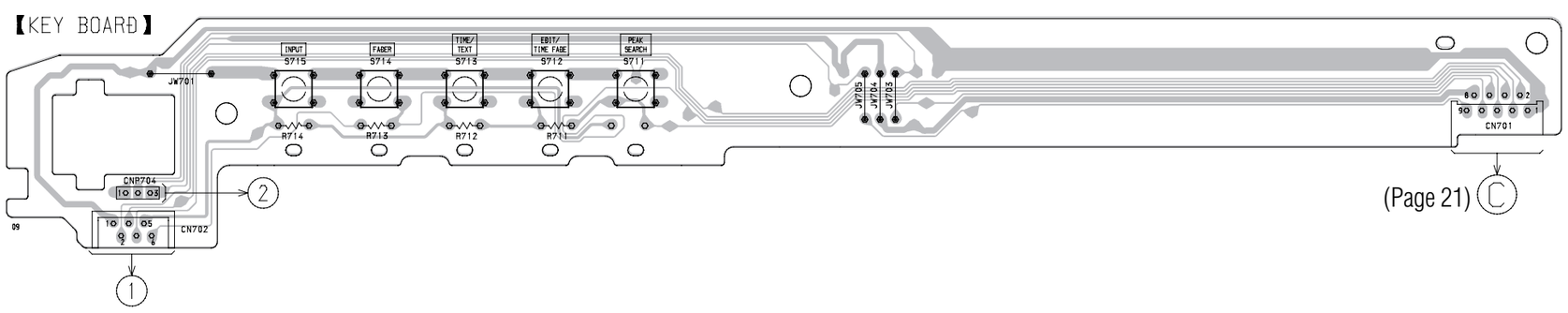
• **Semiconductor Location**

Ref. No.	Location
D802	C-8
D803	C-9
D804	A-10
D805	A-11
D810	A-12
IC810	D-1
IC811	D-4
Q801	D-6
Q802	C-3

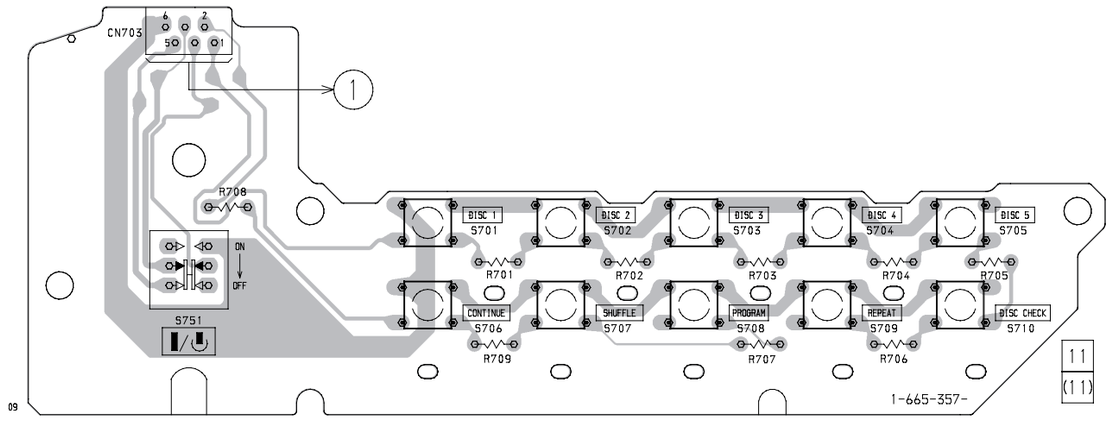
【DISPLAY BOARD】



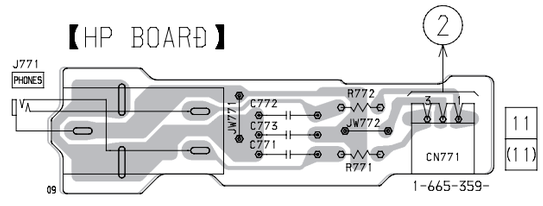
【KEY BOARD】



【POWER SW BOARD】



【HP BOARD】



6-11. IC PIN FUNCTIONS

• IC101 DIGITAL SIGNAL PROCESSOR (CXA2585Q)

Pin No.	Pin Name	I/O	Function
1	DVDD	–	Digital power supply
2	XRST	I	System reset “L” : reset
3	MUTE	I	Muting input “H” : mute
4	DATA	I	Serial data input, supplied from CPU
5	XLAT	I	Latch input, supplied from CPU
6	CLOK	I	Serial data transfer clock input, supplied from CPU
7	SENS	O	SENS signal output to CPU
8	SCLK	I	SENS serial data read-out clock input
9	ATSK	I/O	Input pin for anti-shock (Connected to ground)
10	WFCK	O	WFCK output (Not used)
11	XUGF	O	Not used
12	XPCK	O	Not used
13	GFS	O	Not used
14	C2PO	O	Not used
15	SCOR	O	Sub-code sync output
16	CM4	O	4.2336 MHz output (Not used)
17	WDCK	O	Word clock output (f = 2Fs)
18	DVSS	–	Digital ground
19	COUT	I/O	Numbers of track counted signal input/output (Not used)
20	MIRR	I/O	Mirror signal input/output
21	DFCT	I/O	Defect signal input/output
22	FOK	I/O	Focus OK input/output
23	PWMI	I	Spindle motor external control input (Connected to ground)
24	LOCK	I/O	GFS is sampled by 460 Hz. H when GFS is H (Not used)
25	MDP	O	Output to control spindle motor servo
26	SSTP	I	Input signal to detect disc inner most track
27	FSTO	O	2/3 divider output of pin 71
28	DVDD1	–	Digital power supply
29	SFDR	O	Sled drive output
30	SRDR	O	Sled drive output
31	TFDR	O	Tracking drive output
32	TRDR	O	Tracking drive output
33	FFDR	O	Focus drive output
34	FRDR	O	Focus drive output
35	DVSS1	–	Digital ground
36	TEST	I	TEST pin connected normally to ground
37	TES1	I	TEST pin connected normally to ground
38	VC	I	Center voltage input pin
39	FE	I	Focus error signal input
40	SE	I	Sled error signal input

• Abbreviation
GFS : Guarded Frame Sync

Pin No.	Pin Name	I/O	Function
41	TE	I	Tracking error signal input
42	CE	I	Center servo analog input
43	RFDC	I	RF signal input
44	ADIO	O	Test pin (Not used)
45	AVSS0	–	Analog ground
46	IGEN	I	Stabilized current input for operational amplifiers
47	AVDD0	–	Analog power supply
48	ASYO	O	EFM full swing output
49	ASYI	I	Asymmetry comparate voltage input
50	RFAC	I	EFM signal input
51	AVSS1	–	Analog ground
52	CLTV	I	Control voltage input for master VCO1
53	FILO	O	Filter output for master PLL
54	FILI	I	Filter input for master PLL
55	PCO	O	Charge-pump output for master PLL
56	AVDD1	–	Analog power supply
57	BIAS	I	Asymmetry circuit constant current input
58	VCTL	I	VCO2 control voltage input for wide band EFM PLL (Connected to VDD)
59	V16M	I/O	VCO2 oscillator input/output for wide band EFM PLL (Not used)
60	VPCO	O	Charge-pump output for wide band EFM PLL (Not used)
61	DVDD2	–	Digital power supply
62	ASYE	I	Asymmetry circuit ON/OFF input “L” OFF, “H” : ON (Connected to VDD)
63	MD2	I	Digital-out ON/OFF control input (Connected to VDD)
64	DOUT	O	Digital-out output pin
65	LRCK	O	D/A interface LR clock output (f = Fs)
66	PCMD	O	D/A interface serial data output
67	BCLK	O	D/A interface bit clock output
68	EMPH	O	Playback disc output in emphasis mode (Not used)
69	XTSL	I	X'tal selection input (Connected to ground)
70	DVSS2	–	Digital ground
71	XTAI	I	X'tal oscillator circuit input
72	XTAO	O	X'tal oscillator circuit output (Not used)
73	SOUT	O	Serial data output in servo block (Not used)
74	SOCK	O	Serial data read clock output in servo block (Not used)
75	XOLT	O	Serial data latch output in servo block (Not used)
76	SQSO	O	Sub-Q 80-bit and PCM peak level data output (CD text data output)
77	SQCK	I	Clock input for SQSO read-out
78	SCSY	I	Connected to ground
79	SBSO	O	Sub-P through Sub-W serial output (Not used)
80	EXCK	I	Clock input for SBSO read-out (Connected to ground)

• Abbreviation
EFM : Eight to Fourteen Modulation
PLL : Phase Locked Loop

• **IC302 MASTER CONTROL (CXP84648-019Q)**

Pin No.	Pin Name	I/O	Function
1	D3	O	Address data output to S-RAM
2	D4	O	Address data output to S-RAM
3	D2	O	Address data output to S-RAM
4	D1	O	Address data output to S-RAM
5	D0	I	Not used
6	A8	I/O	Data input/output with S-RAM
7	A7	I/O	Data input/output with S-RAM
8	A6	I/O	Data input/output with S-RAM
9	A5	I/O	Data input/output with S-RAM
10	A4	I/O	Data input/output with S-RAM
11	A3	I/O	Data input/output with S-RAM
12	A2	I/O	Data input/output with S-RAM
13	A1	I/O	Data input/output with S-RAM
14	LED PLAY	O	PLAY lamp control output
15	LED PAUSE	O	PAUSE lamp control output
16	LED MEGA	O	MEGA lamp control output
17	LED XFADE	O	XFADE lamp control output
18	LED DELAY	O	DELAY lamp control output
19	WE	O	Write signal output to S-RAM
20	LOD IN	O	Loading motor control output (loading-in)
21	LOD OUT	O	Loading motor control output (loading-out)
22	* FL.CLK	O	FL driver clock output
23	* FL.DATA	O	FL driver data output
24	* BLK	O	FL display masthead light output
25	A13	O	Address data output to S-RAM
26	A14	O	Address data output to S-RAM
27	A15	O	Address data output to S-RAM
28	DSENS	I	Disc sensor input
29	—	O	Not used
30	RST	I	Reset signal input
31	EXTAL	I	10 MHz clock input
32	XTAL	O	10 MHz clock output
33	VSS	–	Ground
34	NC (TX)	–	Not used
35	TEX	–	Connected to ground
36	AVSS	–	Analog ground
37	AVREF	I	Analog reference voltage input
38	BUSOUT	O	CONTROL-A1 transmission output
39	VERSION	I	Model select input
40	KEY 6	I	key input

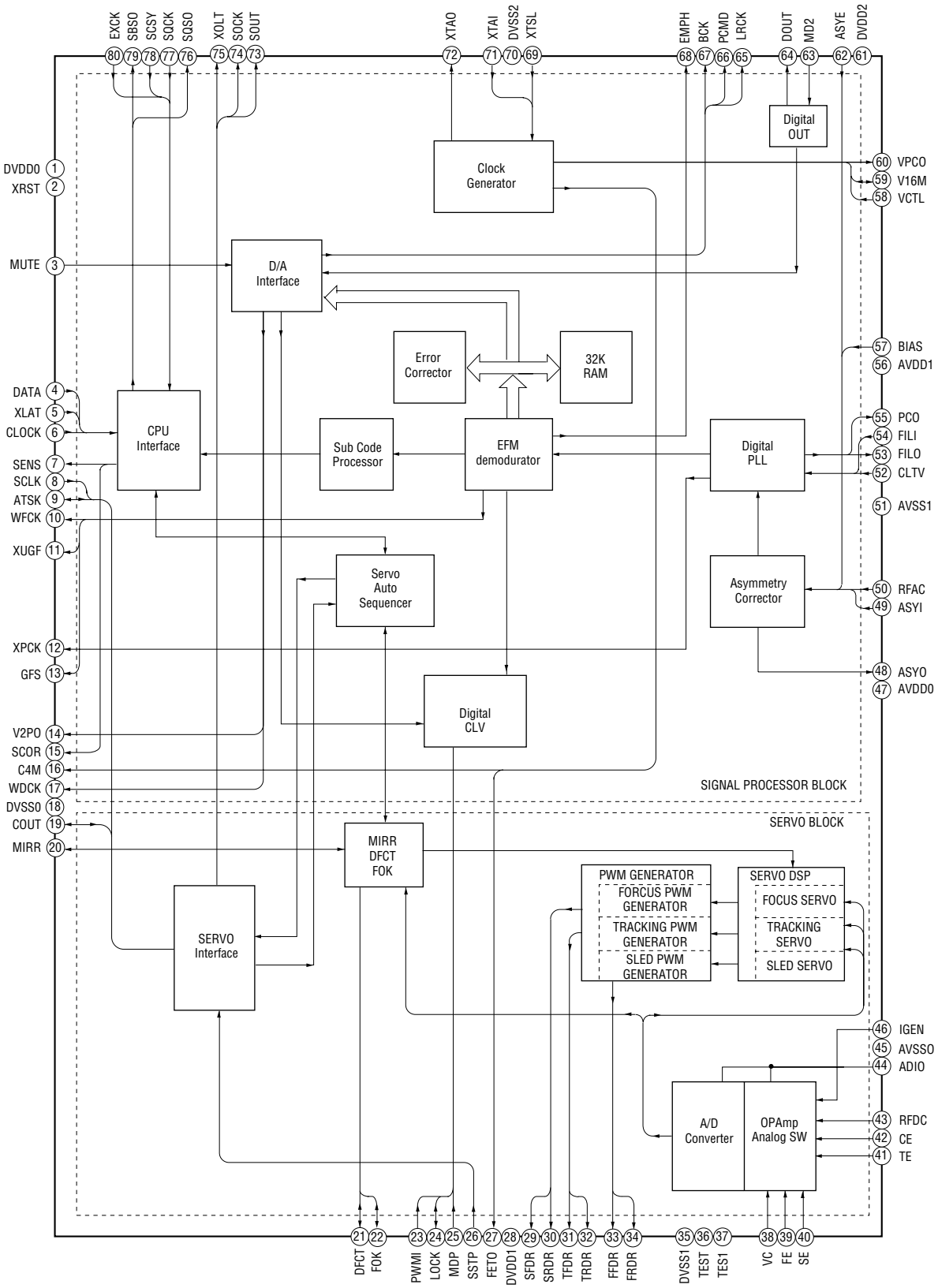
• Abbreviation
FL : Fluorescent indicator tube

Pin No.	Pin Name	I/O	Function
41	KEY 3	I	key input
42	CD1/2/3	I	Remote control mode select input
43	KEY 2	I	key input
44	KEY 1	I	key input
45	ADJ	I	→ Test mode input
46	TSENS	I	Table sensor of disc table input
47	* FLT	O	FL driver latch output
48	CLK	O	Serial clock output
49	LDON	O	Optical pick-up laser diode control output
50	DATA	O	Serial data output
51	SQCK	O	Subcode Q data readout clock output
52	SUBQ	I	Subcode Q data input
53	PRGLT	O	Digital filter latch output
54	SENSE	I	SENSE signal input
55	NC	I	Connected to VDD
56	RMIN	I	Remote control signal input
57	NC	I	Connected to VDD
58	XLT	O	Serial data latch output
59	AMUTE	O	Audio mute output
60	DQSY	I	Not used
61	SCOR	I	Subcode sync input
62	BUSIN	I	CONTROL-A1 receive input
63	XSEL	O	Not used
64	ZMUTE	O	2nd input mute output
65	LP CONT	O	LP control hold output
66	S1	I	Loading position detection input
67	S2	I	Loading position detection input
68	S3	I	Loading position detection input
69	TBLL	O	Table motor left control output
70	TBLR	O	Table motor right control output
71	A0	O	Address data output to S-RAM
72	VDD	–	+5V power supply
73	VDD	–	+5V power supply
74	A12	O	Address data output to S-RAM
75	A11	O	Address data output to S-RAM
76	A10	O	Address data output to S-RAM
77	A9	O	Address data output to S-RAM
78	D7	O	Address data output to S-RAM
79	D6	O	Address data output to S-RAM
80	D5	O	Address data output to S-RAM

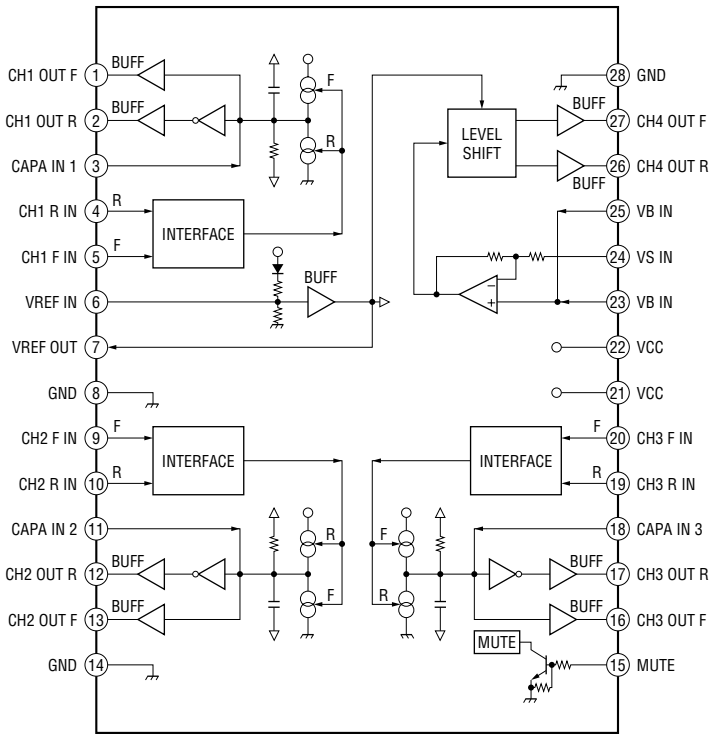
6-12. IC BLOCK DIAGRAMS

• BD section

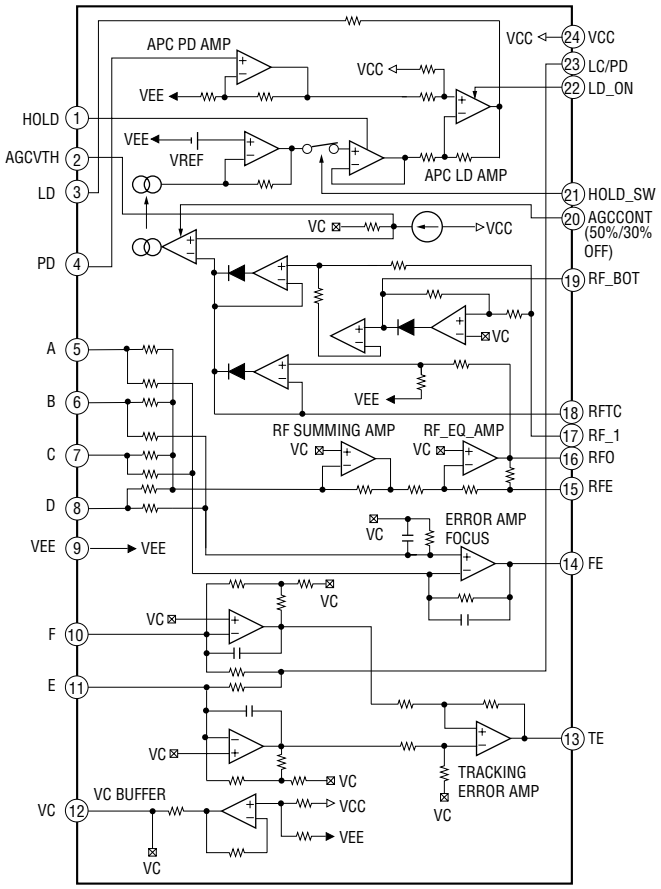
IC101 CXA2585Q



IC102 BA6392FP

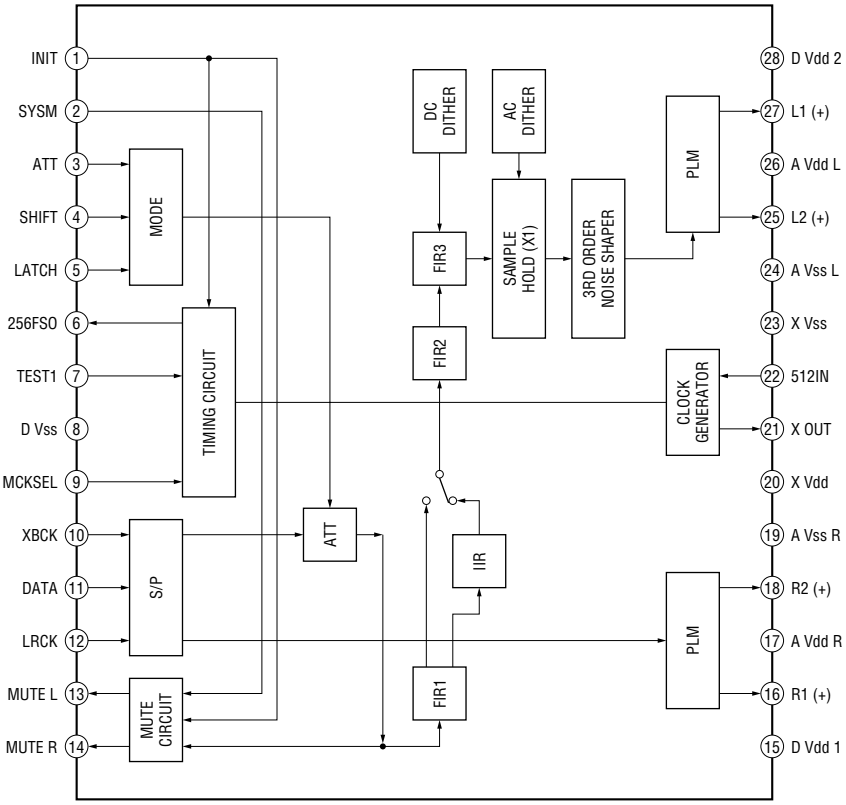


IC103 CXD2568M

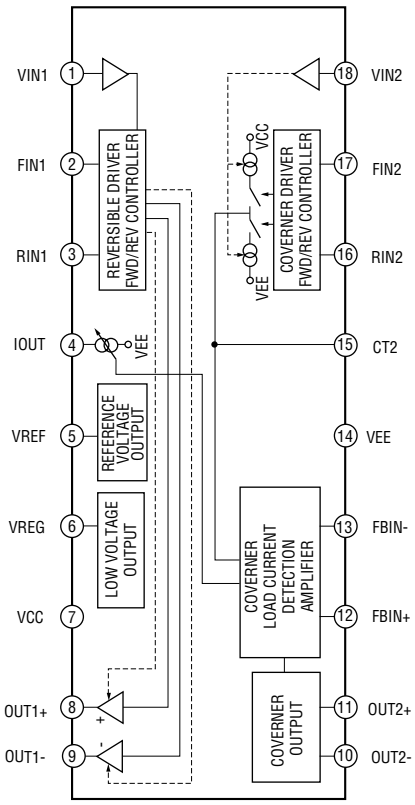


• **Main section**

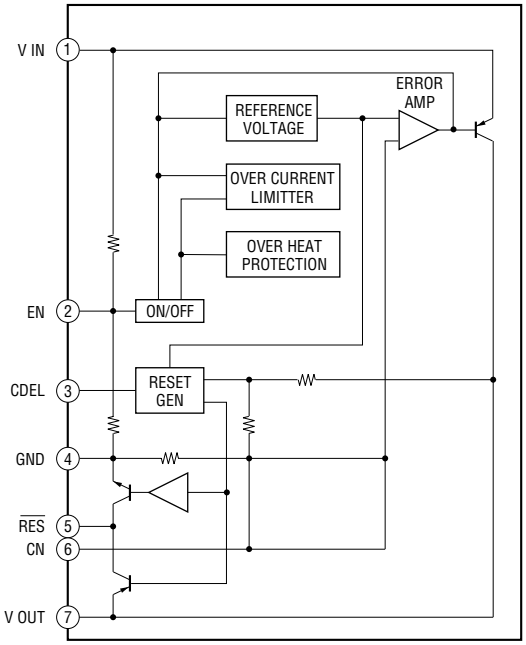
IC301 CXD8567AM



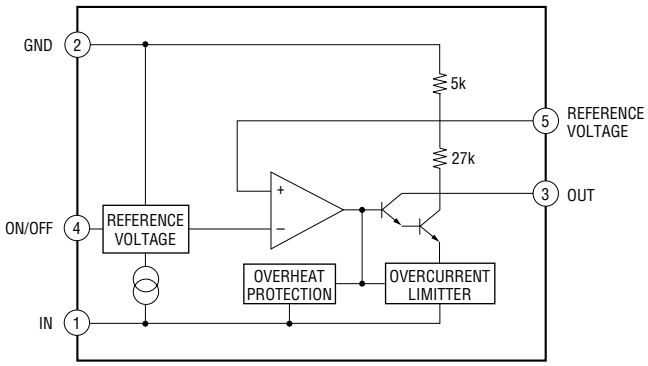
IC304 BA6780



IC601 LA5602



IC603 M5293L



SECTION 7
EXPLODED VIEWS

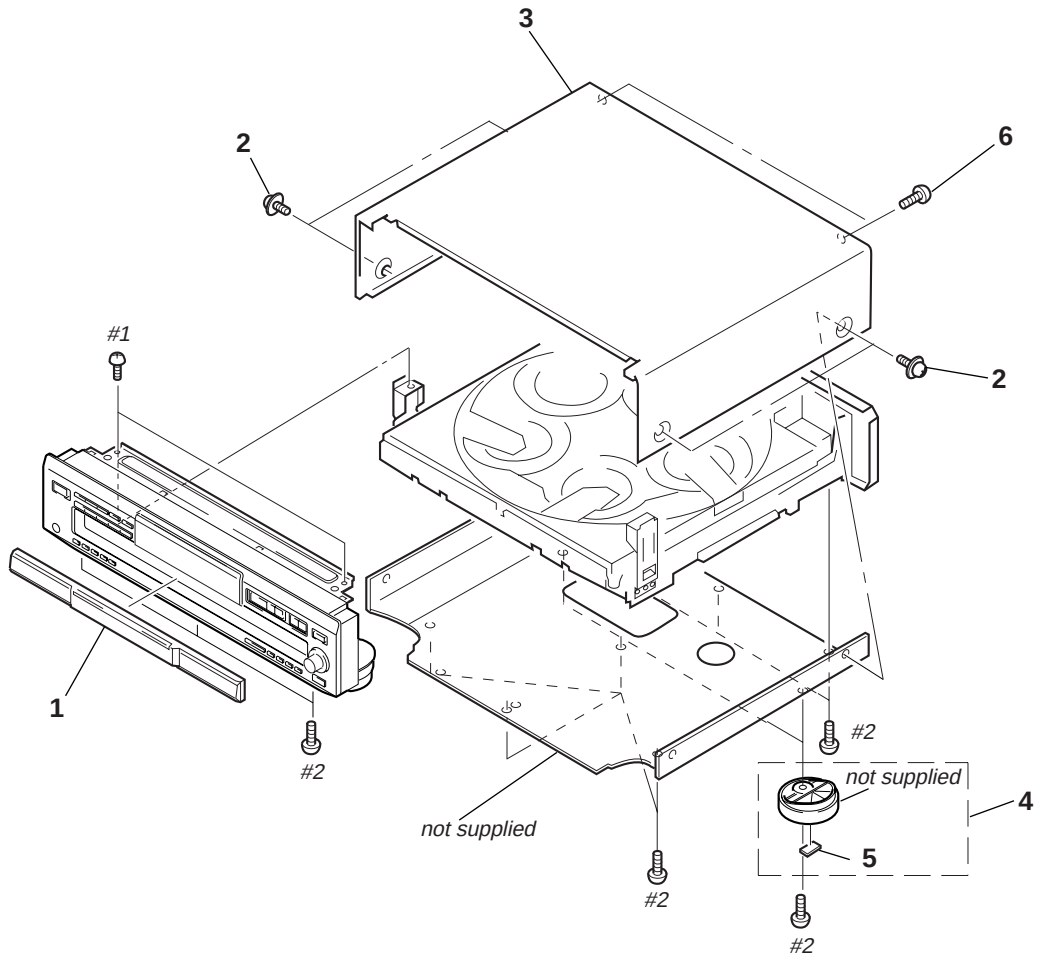
NOTE:
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.

- Abbreviation
  CND : Canadian model
  AUS : Australian modeel

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

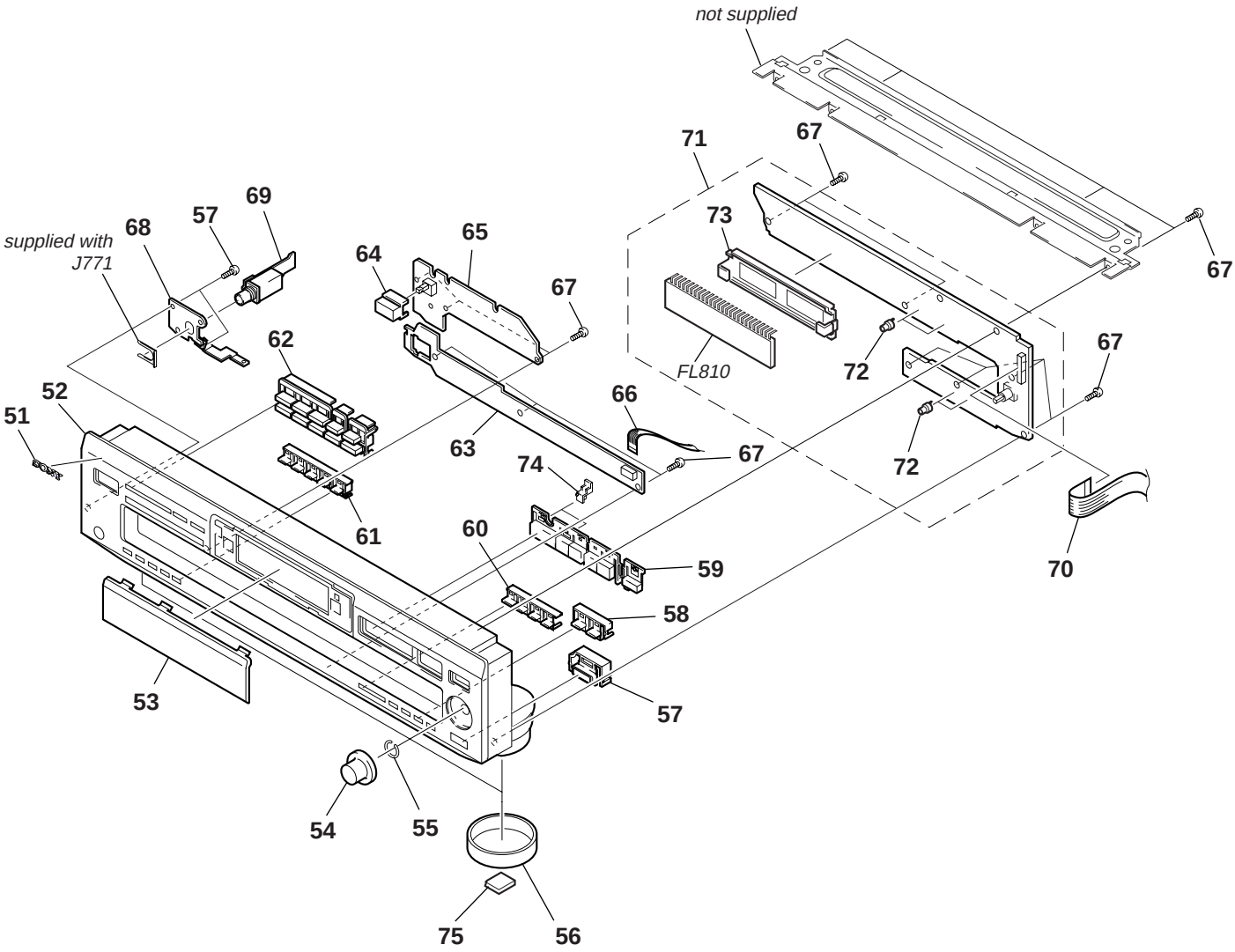
7-1. CASE SECTION



Ref. No.	Part No.	Description	Remark
1	4-997-437-01	PANEL, LOADING	
2	3-704-366-01	SCREW (CASE)(M3X8)	
* 3	4-978-492-11	CASE	
4	X-4946-618-1	FOOT ASSY (US,CND)	
4	X-4946-641-1	FOOT ASSY (AEP,AUS)	

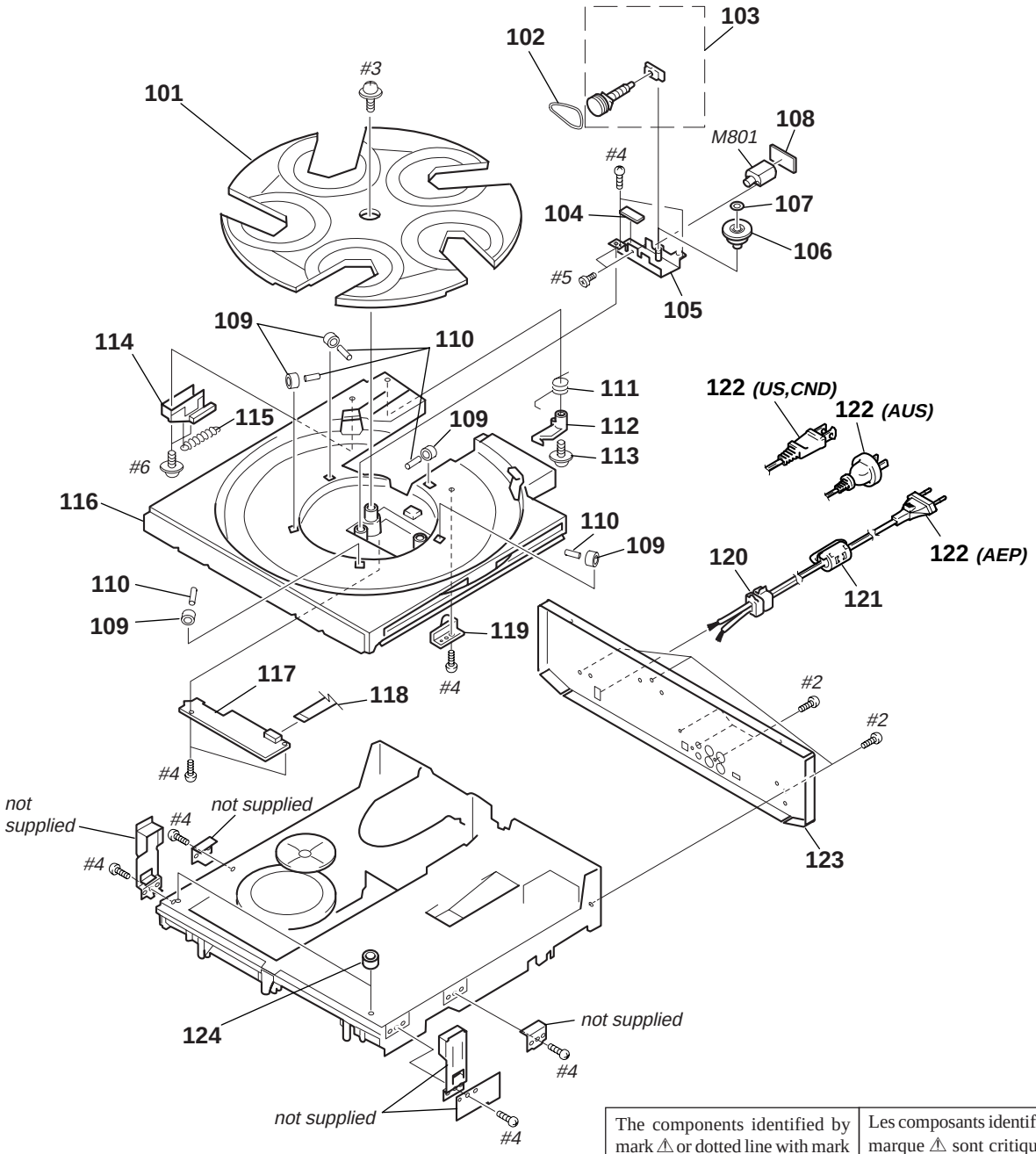
Ref. No.	Part No.	Description	Remark
* 5	4-978-398-21	CUSHION	
6	3-703-685-21	SCREW (+BV 3X8)	

7-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-008-600-01	EMBLEM (5-AR), SONY	
52	4-997-418-01	PANEL, FRONT	
53	4-987-779-11	WINDOW (FL)	
54	4-987-994-01	KNOB (AMS)	
55	3-354-981-01	SPRING (SUS), RING	
56	4-977-593-01	RING (DIA. 50), ORNAMENTAL (AEP,AUS)	
57	4-987-778-01	BUTTON (MEGA-CON)	
58	4-989-725-01	BUTTON (X-FADE)	
59	4-987-775-11	BUTTON (PLAY)	
60	4-987-777-01	BUTTON (FF)	
61	4-987-776-01	BUTTON (FUNC)	
62	4-987-774-01	BUTTON (MODE)	
* 63	1-665-358-11	KEY BOARD	
64	4-999-354-01	BUTTON (POWER)	
* 65	1-665-357-11	POWER SW BOARD	
66	1-782-220-11	WIRE (FLAT TYPE)(9 CORE)	
67	4-951-620-01	SCREW (2.6X8), +BVTP	
* 68	4-979-090-01	BRACKET (HP)	
* 69	1-665-359-11	HP BOARD	
70	1-782-219-11	WIRE (FLAT TYPE)(17 CORE)	
* 71	A-4699-620-A	DISPLAY BOARD, COMPLETE	
* 72	3-362-478-01	HOLDER (T), LED	
* 73	4-989-724-01	HOLDER (FL)	
74	4-989-723-01	INDICATOR (PLAY)	
* 75	4-978-398-21	CUSHION	
FL810	1-517-664-11	INDICATOR TUBE, FLUORESCENT	

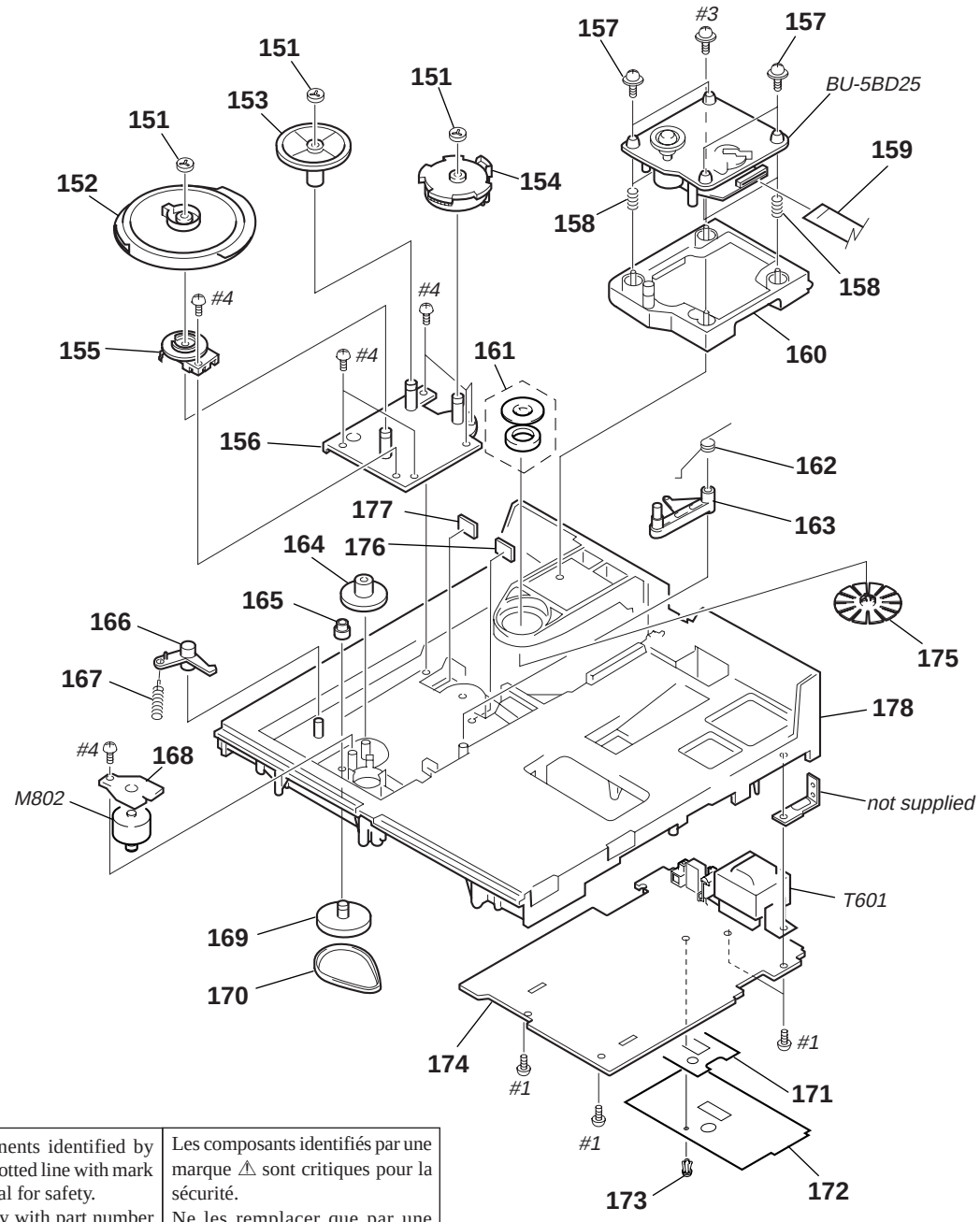
7-3. BACK PANEL AND DISC TABLE SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
101	4-957-299-11	TABLE (B), DISC	
102	4-957-304-01	BELT (RM)	
103	X-4949-852-1	GEAR (ROTARY A) ASSY	
104	4-957-295-11	CUSHION (RM)	
105	X-4943-477-1	BRACKET (RM) ASSY	
106	4-957-284-01	GEAR (ROTARY B)	
107	3-325-697-41	WASHER	
* 108	1-647-364-11	TABLE MOTOR BOARD	
109	4-988-162-01	ROLLER	
110	4-934-376-01	SHAFT (ROLLER)	
111	4-957-293-01	SPRING (RACK RELEASE)	
112	4-957-291-11	LEVER (RACK RELEASE)	
113	4-957-868-21	SCREW (+PTPWH 2.6X20)	
114	4-957-292-11	SLIDER (RACK)	
115	4-957-294-01	SPRING (D.T), TENSION	
116	4-957-298-01	TABLE (A), DISC	
* 117	1-647-362-11	SENSOR BOARD	
118	1-782-816-11	WIRE (FLAT TYPE)(6 CORE)	
119	X-4943-480-1	BRACKET (ROLLER D) ASSY	
120	4-966-267-11	BUSHING (FBS001), CORD	
121	1-500-386-11	FILTER, CLAMP (FERRITE CORE)	
⚠122	1-575-651-21	CORD, POWER (AEP)	
⚠122	1-590-926-11	CORD, POWER (US,CND)	
⚠122	1-696-845-11	CORD, POWER (AUS)	
* 123	4-997-419-01	PANEL, BACK (US)	
* 123	4-997-419-11	PANEL, BACK (CND)	
* 123	4-997-419-21	PANEL, BACK (AEP)	
* 123	4-997-419-31	PANEL, BACK (AUS)	
* 124	4-951-619-21	CUSHION (A)	
M801	A-4660-525-A	MOTOR ASSY, ROTARY (TABLE)	

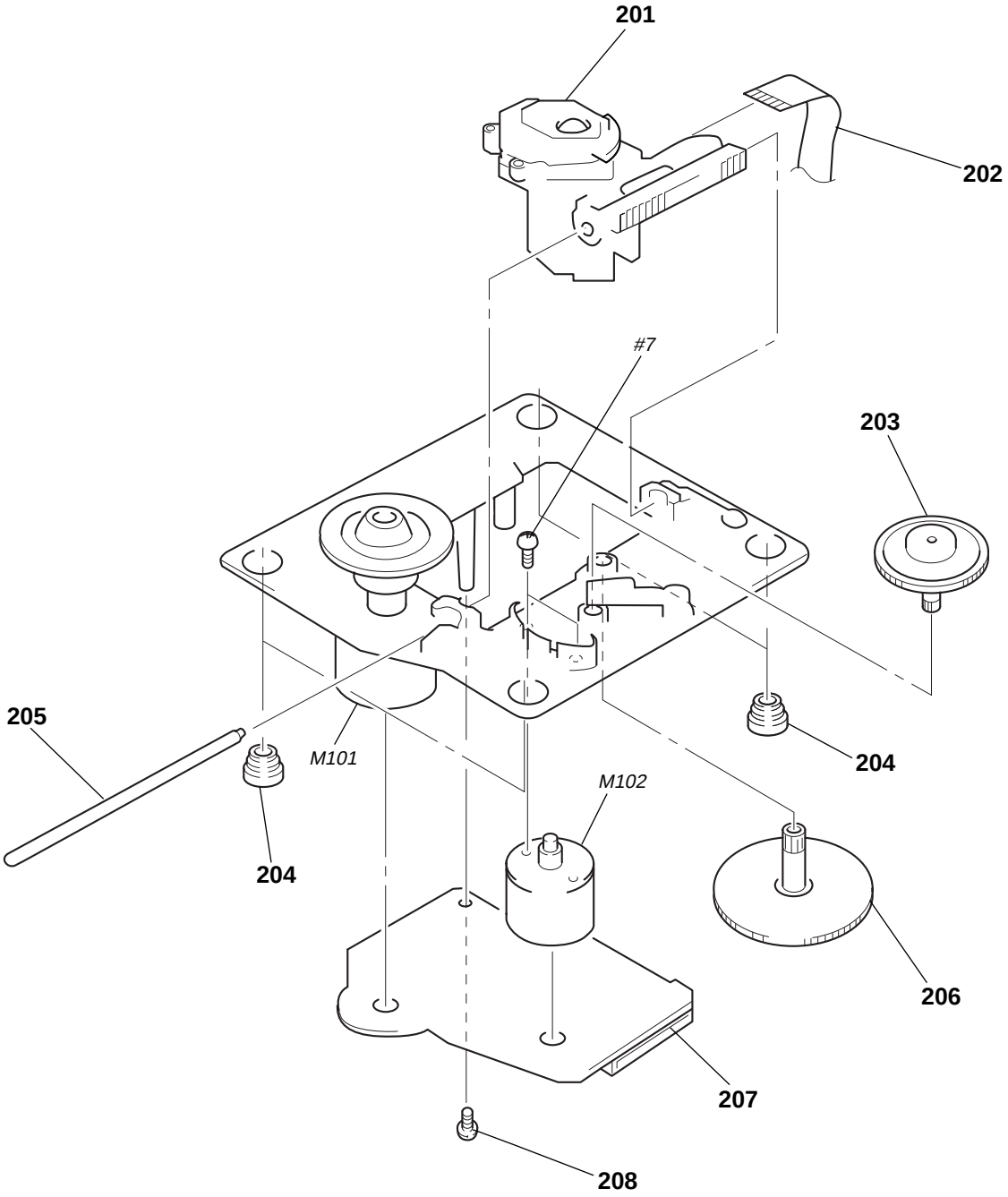
7-4. CHASSIS SECTION



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
151	4-957-283-01	WASHER (5), STOPPER	
152	4-957-288-01	GEAR (MAIN)	
153	4-957-287-21	GEAR (REV)	
154	4-957-286-11	GEAR (U/D)	
155	1-466-996-11	ENCODER, ROTARY	
156	X-4946-195-1	BRACKET (GEAR) ASSY	
157	4-933-134-01	SCREW (+PTPWH M2.6X6)	
158	4-948-503-01	SPRING (BU), COMPRESSION	
159	1-765-443-11	WIRE (FLAT TYPE)(23 CORE)	
160	4-957-289-22	HOLDER (BU)	
161	1-452-925-21	MAGNET ASSY	
162	4-957-281-01	SPRING (LOCK LEVER)	
163	4-957-279-11	LEVER, LOCK	
164	4-957-303-01	GEAR (LOADING C)	
165	4-934-375-21	GEAR (LOADING B)	
166	4-957-285-01	LEVER, SET	
167	4-962-087-01	SPRING (S), TENSION	
* 168	1-659-738-11	LOADING BOARD	
169	X-4949-851-1	PULLY ASSY	
170	4-944-490-01	BELT (TIMING)	
* 171	4-957-555-01	SHEET, INSULATING (AEP,AUS)	
* 172	4-957-556-01	SHEET, INSULATING (AEP,AUS)	
173	3-531-576-11	RIVET (AEP,AUS)	
* 174	A-4724-016-A	MAIN BOARD, COMPLETE (US,CND)	
* 174	A-4724-017-A	MAIN BOARD, COMPLETE (AEP,AUS)	
175	4-993-142-11	PULLEY (L), PRESS	
176	4-981-731-31	CUSHION (U/D)	
177	4-981-731-21	CUSHION (U/D)	
178	4-957-300-03	CHASSIS	
M802	A-4660-914-A	MOTOR ASSY, LOADING (LOADING)	
⚠T601	1-429-956-11	TRANSFORMER, POWER (US,CND)	
⚠T601	1-431-076-11	TRANSFORMER, POWER (AEP,AUS)	

7-5. BASE UNIT SECTION (BU-5BD25)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
⚠201	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP	
202	1-769-069-11	WIRE (FLAT TYPE)(16 CORE)	
203	4-917-567-21	GEAR (M)	
204	4-951-940-41	INSULATOR (BU)	
205	4-917-565-01	SHAFT, SLED	
206	4-917-564-01	GEAR (P), FLATNESS	
* 207	A-4724-004-A	BD BOARD, COMPLETE	
208	4-951-620-01	SCREW (2.6X8), +BVTP	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	

SECTION 8
ELECTRICAL PARTS LIST

BD

Note:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: µ , for example:
  uA...: µ A..., uPA...: µ PA..., uPB...: µ PB..., uPC...: µ PC..., uPD...: µ PD...
- CAPACITORS
  uF : µ F
- COILS
  uH : µ H
- Abbreviation
  CND : Canadian model
  AUS : Australian modeel

Ref. No.	Part No.	Description			Remark
*	A-4724-004-A	BD BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C102	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C103	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C105	1-135-155-21	TANTALUM CHIP	4.7uF	10%	16V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C108	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C109	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C110	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C111	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C112	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-126-607-11	ELECT CHIP	47uF	20%	4V
C117	1-126-209-11	ELECT CHIP	100uF	20%	4V
C118	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C119	1-163-231-11	CERAMIC CHIP	15PF	5%	50V
C120	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C121	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C123	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C124	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C125	1-163-217-11	CERAMIC CHIP	1PF	0.25PF	50V
C126	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C140	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C141	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C151	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C153	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C154	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C156	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C157	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C159	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C161	1-163-038-91	CERAMIC CHIP	0.1uF		25V
		< CONNECTOR >			
CN101	1-770-072-11	CONNECTOR,(LIF(NON-ZIF))FFC23P			
CN102	1-777-937-11	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC101	8-752-389-34	IC CXD2585Q			
IC102	8-759-455-91	IC BA6392FP-E2			
IC103	8-752-085-51	IC CXA2568M-T6			
		< JUMPER RESISTOR >			
JW102	1-216-295-91	SHORT 0			
		< COIL >			
L101	1-414-234-11	INDUCTOR CHIP 0uH			
		< MOTOR >			
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)			
M102	X-4917-504-1	MOTOR ASSY (SLED)			
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
		< RESISTOR >			
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R102	1-216-097-91	RES,CHIP	100K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-085-00	METAL CHIP	33K	5%	1/10W
R105	1-216-097-91	RES,CHIP	100K	5%	1/10W
R106	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R107	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R108	1-216-073-00	METAL CHIP	10K	5%	1/10W
R109	1-216-121-91	RES,CHIP	1M	5%	1/10W
R110	1-216-025-91	RES,CHIP	100	5%	1/10W
R112	1-216-049-91	RES,CHIP	1K	5%	1/10W
R123	1-216-073-00	METAL CHIP	10K	5%	1/10W
R124	1-216-097-91	RES,CHIP	100K	5%	1/10W
R125	1-216-037-00	METAL CHIP	330	5%	1/10W
R126	1-216-037-00	METAL CHIP	330	5%	1/10W
R127	1-216-037-00	METAL CHIP	330	5%	1/10W
R131	1-216-037-00	METAL CHIP	330	5%	1/10W
R135	1-216-295-91	SHORT	0		
R136	1-216-295-91	SHORT	0		
R137	1-216-295-91	SHORT	0		
R138	1-216-295-91	SHORT	0		
R143	1-216-103-00	METAL CHIP	180K	5%	1/10W
R144	1-216-103-00	METAL CHIP	180K	5%	1/10W
R145	1-216-121-91	RES,CHIP	1M	5%	1/10W
R146	1-216-121-91	RES,CHIP	1M	5%	1/10W
R147	1-216-081-00	METAL CHIP	22K	5%	1/10W
R148	1-216-001-00	METAL CHIP	10	5%	1/10W
R149	1-216-003-11	RES,CHIP	12	5%	1/10W

BD DISPLAY HP

Ref. No.	Part No.	Description			Remark
R158	1-216-111-00	METAL CHIP	390K	5%	1/10W
R159	1-216-101-00	METAL CHIP	150K	5%	1/10W
R161	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R162	1-216-101-00	METAL CHIP	150K	5%	1/10W
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			
**********					
*	A-4699-620-A	DISPLAY BOARD, COMPLETE			
		**********			
*	3-362-478-01	HOLDER (T), LED			
*	4-989-724-01	HOLDER (FL)			
		< CAPACITOR >			
C801	1-162-210-31	CERAMIC	30PF	5%	50V
C802	1-164-159-11	CERAMIC	0.1uF		50V
C810	1-161-494-00	CERAMIC	0.022uF		25V
C811	1-162-282-31	CERAMIC	100PF	10%	50V
C812	1-162-282-31	CERAMIC	100PF	10%	50V
C813	1-164-159-11	CERAMIC	0.1uF		50V
C814	1-161-494-00	CERAMIC	0.022uF		25V
C851	1-126-968-11	ELECT	100uF	20%	6.3V
		< CONNECTOR >			
* CN810	1-568-836-11	SOCKET, CONNECTOR 17P			
		< DIODE >			
D802	8-719-303-00	DIODE SEL2510C-C			
D803	8-719-301-52	DIODE SEL2810A-C			
D804	8-719-301-44	DIODE SEL2410E-D			
D805	8-719-301-44	DIODE SEL2410E-D			
D810	8-719-057-97	DIODE SEL5923A-TP15			
		< FLUORESCENT INDICATOR >			
FL810	1-517-664-11	INDICATOR TUBE, FLUORESCENT			
		< COMPOSITION CIRCUIT BLOCK >			
IB801	1-232-362-11	COMPOSITION CIRCUIT BLOCK			
		< IC >			
IC810	8-749-014-66	IC NJL56H400			
IC811	8-759-337-52	IC LC75721E			
		< TRANSISTOR >			
Q801	8-729-029-66	TRANSISTOR DTC114ESA			
Q802	8-729-029-66	TRANSISTOR DTC114ESA			
		< RESISTOR >			
R801	1-249-429-11	CARBON	10K	5%	1/4W
R802	1-247-807-31	CARBON	100	5%	1/4W
R803	1-249-408-11	CARBON	180	5%	1/4W F
R804	1-247-807-31	CARBON	100	5%	1/4W
R805	1-247-807-31	CARBON	100	5%	1/4W

Ref. No.	Part No.	Description			Remark
R806	1-249-441-11	CARBON	100K	5%	1/4W
R807	1-249-441-11	CARBON	100K	5%	1/4W
R808	1-249-441-11	CARBON	100K	5%	1/4W
R811	1-249-415-11	CARBON	680	5%	1/4W F
R812	1-249-417-11	CARBON	1K	5%	1/4W F
R813	1-249-419-11	CARBON	1.5K	5%	1/4W F
R814	1-249-421-11	CARBON	2.2K	5%	1/4W F
R815	1-247-843-11	CARBON	3.3K	5%	1/4W
R816	1-249-427-11	CARBON	6.8K	5%	1/4W F
R817	1-249-415-11	CARBON	680	5%	1/4W F
R818	1-249-417-11	CARBON	1K	5%	1/4W F
R819	1-249-419-11	CARBON	1.5K	5%	1/4W F
R820	1-249-421-11	CARBON	2.2K	5%	1/4W F
R821	1-247-843-11	CARBON	3.3K	5%	1/4W
R822	1-249-427-11	CARBON	6.8K	5%	1/4W F
R823	1-249-431-11	CARBON	15K	5%	1/4W
R824	1-249-431-11	CARBON	15K	5%	1/4W
R830	1-247-807-31	CARBON	100	5%	1/4W
R831	1-249-441-11	CARBON	100K	5%	1/4W
R832	1-249-441-11	CARBON	100K	5%	1/4W
R833	1-247-807-31	CARBON	100	5%	1/4W
R834	1-247-807-31	CARBON	100	5%	1/4W
R835	1-247-807-31	CARBON	100	5%	1/4W
R851	1-247-807-31	CARBON	100	5%	1/4W
R852	1-247-807-31	CARBON	100	5%	1/4W
		< SWITCH >			
S801	1-554-303-21	SWITCH, TACTILE (X-FADE)			
S802	1-554-303-21	SWITCH, TACTILE (NO DELAY)			
S803	1-554-303-21	SWITCH, TACTILE (CLEAR)			
S804	1-554-303-21	SWITCH, TACTILE (CHECK)			
S805	1-554-303-21	SWITCH, TACTILE (▶▶)			
S806	1-554-303-21	SWITCH, TACTILE (◀◀)			
S807	1-554-303-21	SWITCH, TACTILE (MEGA CONTROL)			
S808	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)			
S809	1-554-303-21	SWITCH, TACTILE (DISC SKIP)			
S810	1-554-303-21	SWITCH, TACTILE (EX-CHANGE)			
S811	1-554-303-21	SWITCH, TACTILE (■)			
S812	1-554-303-21	SWITCH, TACTILE (❚❚)			
S813	1-554-303-21	SWITCH, TACTILE (▷)			
S814	1-475-543-11	ENCODER, ROTARY (I◀◀ AMS ▶▶I PUSH ENTER)			
**********					
*	1-665-359-11	HP BOARD			
		*********			
		< CAPACITOR >			
C771	1-162-294-31	CERAMIC	0.001uF	10%	50V
C772	1-162-294-31	CERAMIC	0.001uF	10%	50V
C773	1-164-159-11	CERAMIC	0.1uF		50V
		< CONNECTOR >			
* CN771	1-568-941-11	PIN, CONNECTOR 3P			
		< JACK >			
J771	1-568-519-41	JACK, LARGE TYPE (PHONES)			

Ref. No.	Part No.	Description				Remark
		< RESISTOR >				
R771	1-249-401-11	CARBON	47	5%	1/4W	F
R772	1-249-401-11	CARBON	47	5%	1/4W	F
**********						
*	1-665-358-11	KEY BOARD				
		*********				
		< CONNECTOR >				
* CN701	1-568-852-11	SOCKET, CONNECTOR 9P				
CN702	1-750-195-11	CONNECTOR, BOARD TO BOARD 6P				
		< RESISTOR >				
R711	1-249-415-11	CARBON	680	5%	1/4W	F
R712	1-249-417-11	CARBON	1K	5%	1/4W	F
R713	1-249-415-11	CARBON	680	5%	1/4W	F
R714	1-249-419-11	CARBON	1.5K	5%	1/4W	F
		< SWITCH >				
S711	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)				
S712	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)				
S713	1-554-303-21	SWITCH, TACTILE (TIME/TEXT)				
S714	1-554-303-21	SWITCH, TACTILE (FADER)				
S715	1-554-303-21	SWITCH, TACTILE (INPUT)				
**********						
*	1-659-738-11	LOADING BOARD				
		**********				
		< MOTOR >				
M802	A-4660-914-A	MOTOR ASSY, LOADING (LOADING)				
**********						
*	A-4724-016-A	MAIN BOARD, COMPLETE (US,CND)				
		**********				
*	A-4724-017-A	MAIN BOARD, COMPLETE (AEP,AUS)				
		**********				
	7-685-871-01	SCREW +BVTT 3X6 (S)				
		< CAPACITOR >				
C301	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	
C302	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	
C303	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C305	1-124-443-00	ELECT	100uF	20%	10V	
C306	1-124-442-00	ELECT	330uF	20%	6.3V	
C307	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C311	1-163-005-11	CERAMIC CHIP	470PF	10%	50V	
C317	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C321	1-110-489-11	CAPACITOR	1F		5.5V	
C322	1-163-033-91	CERAMIC CHIP	0.022uF		50V	
C372	1-165-319-11	CERAMIC CHIP	0.1uF		50V	
C373	1-163-033-91	CERAMIC CHIP	0.022uF		50V	
C374	1-124-443-00	ELECT	100uF	20%	10V	
C381	1-163-033-91	CERAMIC CHIP	0.022uF		50V	
C401	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	

Ref. No.	Part No.	Description			Remark
C402	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C403	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C404	1-106-359-00	MYLAR	4700PF	5%	200V
C405	1-130-472-00	MYLAR	0.0012uF	5%	50V
C406	1-124-443-00	ELECT	100uF	20%	10V
C407	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C408	1-124-584-00	ELECT	100uF	20%	10V
C410	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C411	1-104-665-11	ELECT	100uF	20%	16V
C412	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C451	1-124-907-11	ELECT	10uF	20%	50V
C501	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C502	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C503	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C504	1-106-359-00	MYLAR	4700PF	5%	200V
C505	1-130-472-00	MYLAR	0.0012uF	5%	50V
C506	1-124-443-00	ELECT	100uF	20%	10V
C507	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C508	1-124-584-00	ELECT	100uF	20%	10V
C509	1-126-962-11	ELECT	3.3uF	20%	50V
C510	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C511	1-104-665-11	ELECT	100uF	20%	16V
C512	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C551	1-124-907-11	ELECT	10uF	20%	50V
C602	1-126-944-11	ELECT	3300uF	20%	16V
C603	1-126-942-61	ELECT	1000uF	20%	16V
C604	1-126-963-11	ELECT	4.7uF	20%	50V
C605	1-126-963-11	ELECT	4.7uF	20%	50V
C606	1-126-963-11	ELECT	4.7uF	20%	50V
C607	1-126-941-11	ELECT	470uF	20%	6.3V
C608	1-104-666-11	ELECT	220uF	20%	10V
C609	1-124-918-11	ELECT	47uF	20%	63V
C610	1-124-907-11	ELECT	10uF	20%	50V
C614	1-104-665-11	ELECT	100uF	20%	16V
C616	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C619	1-104-664-11	ELECT	47uF	20%	16V
C620	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C622	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C624	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C625	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C626	1-163-033-91	CERAMIC CHIP	0.022uF		50V
C628	1-104-664-11	ELECT	47uF	20%	16V
C651	1-104-664-11	ELECT	47uF	20%	16V
		< CONNECTOR >			
CN401	1-750-640-11	CONNECTOR, FFC/FPC 23P			
CN402	1-568-860-11	SOCKET, CONNECTOR 17P			
* CN403	1-568-852-11	SOCKET, CONNECTOR 9P			
* CN404	1-568-825-11	SOCKET, CONNECTOR 6P			
* CN601	1-573-047-11	PIN, CONNECTOR (PC BOARD) 2P			
		< DIODE >			
D302	8-719-016-74	DIODE 1SS352			
D321	8-719-016-74	DIODE 1SS352			
D381	8-719-016-74	DIODE 1SS352			
D601	8-719-210-33	DIODE EC10DS2			
D602	8-719-210-33	DIODE EC10DS2			

MAIN

Ref. No.	Part No.	Description	Remark
D603	8-719-210-33	DIODE EC10DS2	
D604	8-719-210-33	DIODE EC10DS2	
D605	8-719-210-33	DIODE EC10DS2	
D606	8-719-977-22	DIODE DTZ9.1	
D608	8-719-016-74	DIODE 1SS352	
D609	8-719-976-96	DIODE DTZ4.7C	
		< GROUND TERMINAL >	
EB601	1-537-770-21	TERMINAL BOARD, GROUND	
		< IC >	
IC301	8-759-362-47	IC CXD8567AM	
IC302	8-752-893-90	IC CXP84648-019Q	
IC303	8-759-463-99	IC M5M5256DFP-70XL	
IC304	8-759-356-03	IC BA6780	
IC305	8-759-636-55	IC M5218AFP	
IC371	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)	
IC401	8-759-100-96	IC UPC4558G2	
IC402	8-759-100-96	IC UPC4558G2	
IC501	8-759-100-96	IC UPC4558G2	
IC502	8-759-100-96	IC UPC4558G2	
IC601	8-759-061-65	IC LA5602	
IC602	8-749-011-78	IC BA17807T	
IC603	8-759-633-42	IC M5293L	
		< JACK >	
J301	1-770-720-11	JACK, PIN 4P (LINE OUT, 2ND CD IN)	
J381	1-774-726-11	JACK (S-LINK CONTROL-A1)	
		< COIL >	
L301	1-410-375-11	INDUCTOR CHIP 3.3uH	
L303	1-410-375-11	INDUCTOR CHIP 3.3uH	
L308	1-414-234-11	INDUCTOR CHIP 0uH	
L309	1-414-234-11	INDUCTOR CHIP 0uH	
L310	1-414-234-11	INDUCTOR CHIP 0uH	
L311	1-410-375-11	INDUCTOR CHIP 3.3uH	
L312	1-410-375-11	INDUCTOR CHIP 3.3uH	
L313	1-412-473-21	INDUCTOR 0uH	
L401	1-410-375-11	INDUCTOR CHIP 3.3uH	
L501	1-410-375-11	INDUCTOR CHIP 3.3uH	
L601	1-414-234-11	INDUCTOR CHIP 0uH	
L603	1-414-234-11	INDUCTOR CHIP 0uH	
		< TRANSISTOR >	
Q201	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q301	8-729-029-66	TRANSISTOR DTC114ESA	
Q302	8-729-029-66	TRANSISTOR DTC114ESA	
Q303	8-729-029-66	TRANSISTOR DTC114ESA	
Q304	8-729-029-66	TRANSISTOR DTC114ESA	
Q305	8-729-029-66	TRANSISTOR DTC114ESA	
Q311	8-729-900-53	TRANSISTOR DTC114EK	
Q321	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q322	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q381	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q402	8-729-422-29	TRANSISTOR 2SD601A-S	
Q404	8-729-422-29	TRANSISTOR 2SD601A-S	
Q405	8-729-422-29	TRANSISTOR 2SD601A-S	
Q406	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q502	8-729-422-29	TRANSISTOR 2SD601A-S	
Q503	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q504	8-729-422-29	TRANSISTOR 2SD601A-S	
Q505	8-729-422-29	TRANSISTOR 2SD601A-S	
Q506	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q601	8-729-119-76	TRANSISTOR 2SA1175-HFE	
		< RESISTOR >	
R205	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R206	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R251	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R252	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R253	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R254	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R262	1-220-227-11	RES,CHIP 1.2 10% 1/4W	
R263	1-220-227-11	RES,CHIP 1.2 10% 1/4W	
R300	1-216-295-91	SHORT 0	
R301	1-216-063-91	RES,CHIP 3.9K 5% 1/10W	
R303	1-216-033-00	METAL CHIP 220 5% 1/10W	
R304	1-216-041-00	METAL CHIP 470 5% 1/10W	
R305	1-216-295-91	SHORT 0	
R307	1-216-295-91	SHORT 0	
R308	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R309	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R310	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R311	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R312	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R313	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R314	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R315	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R316	1-216-065-91	RES,CHIP 4.7K 5% 1/10W	
R317	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R318	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R319	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R320	1-216-295-91	SHORT 0	
R321	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R322	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R323	1-216-013-00	METAL CHIP 33 5% 1/10W	
R324	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R326	1-216-295-91	SHORT 0	
R327	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R328	1-216-295-91	SHORT 0	
R329	1-216-295-91	SHORT 0	
R330	1-216-295-91	SHORT 0	
R331	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R333	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R334	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R335	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R336	1-216-295-91	SHORT 0	
R337	1-216-295-91	SHORT 0	
R338	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R339	1-216-295-91	SHORT 0	
R340	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R341	1-216-097-91	RES,CHIP 100K 5% 1/10W	
R342	1-216-097-91	RES,CHIP 100K 5% 1/10W	

Ref. No.	Part No.	Description			Remark
R343	1-216-073-00	METAL CHIP	10K	5%	1/10W
R360	1-216-295-91	SHORT	0		
R362	1-216-073-00	METAL CHIP	10K	5%	1/10W
R363	1-216-073-00	METAL CHIP	10K	5%	1/10W
R364	1-216-073-00	METAL CHIP	10K	5%	1/10W
R365	1-216-073-00	METAL CHIP	10K	5%	1/10W
R381	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R382	1-216-073-00	METAL CHIP	10K	5%	1/10W
R383	1-216-001-00	METAL CHIP	10	5%	1/10W
R403	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R404	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R405	1-216-077-00	METAL CHIP	15K	5%	1/10W
R406	1-216-077-00	METAL CHIP	15K	5%	1/10W
R407	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R408	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R409	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R410	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R411	1-216-105-91	RES,CHIP	220K	5%	1/10W
R412	1-216-047-91	RES,CHIP	820	5%	1/10W
R413	1-216-033-00	METAL CHIP	220	5%	1/10W
R414	1-216-033-00	METAL CHIP	220	5%	1/10W
R415	1-216-295-91	SHORT	0		
R416	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R418	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R419	1-216-097-91	RES,CHIP	100K	5%	1/10W
R420	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R421	1-216-073-00	METAL CHIP	10K	5%	1/10W
R422	1-247-807-31	CARBON	100	5%	1/4W
R450	1-216-113-00	METAL CHIP	470K	5%	1/10W
R451	1-216-073-00	METAL CHIP	10K	5%	1/10W
R452	1-216-072-00	METAL CHIP	9.1K	5%	1/10W
R453	1-216-073-00	METAL CHIP	10K	5%	1/10W
R454	1-216-073-00	METAL CHIP	10K	5%	1/10W
R455	1-216-073-00	METAL CHIP	10K	5%	1/10W
R456	1-216-048-00	METAL CHIP	910	5%	1/10W
R457	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R470	1-216-073-00	METAL CHIP	10K	5%	1/10W
R471	1-216-073-00	METAL CHIP	10K	5%	1/10W
R503	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R504	1-216-689-11	METAL CHIP	39K	0.5%	1/10W
R505	1-216-077-00	METAL CHIP	15K	5%	1/10W
R506	1-216-077-00	METAL CHIP	15K	5%	1/10W
R507	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R508	1-216-691-11	METAL CHIP	47K	0.5%	1/10W
R509	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R510	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R511	1-216-105-91	RES,CHIP	220K	5%	1/10W
R512	1-216-047-91	RES,CHIP	820	5%	1/10W
R513	1-216-033-00	METAL CHIP	220	5%	1/10W
R514	1-216-033-00	METAL CHIP	220	5%	1/10W
R516	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R517	1-216-097-91	RES,CHIP	100K	5%	1/10W
R518	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R519	1-216-097-91	RES,CHIP	100K	5%	1/10W
R520	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R521	1-216-073-00	METAL CHIP	10K	5%	1/10W
R522	1-247-807-31	CARBON	100	5%	1/4W

Ref. No.	Part No.	Description			Remark
R550	1-216-113-00	METAL CHIP	470K	5%	1/10W
R551	1-216-073-00	METAL CHIP	10K	5%	1/10W
R552	1-216-072-00	METAL CHIP	9.1K	5%	1/10W
R553	1-216-073-00	METAL CHIP	10K	5%	1/10W
R554	1-216-073-00	METAL CHIP	10K	5%	1/10W
R555	1-216-073-00	METAL CHIP	10K	5%	1/10W
R556	1-216-048-00	METAL CHIP	910	5%	1/10W
R557	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R601	1-216-085-00	METAL CHIP	33K	5%	1/10W
R602	1-216-073-00	METAL CHIP	10K	5%	1/10W
R603	1-216-091-00	METAL CHIP	56K	5%	1/10W
R604	1-216-073-00	METAL CHIP	10K	5%	1/10W
R607	1-216-037-00	METAL CHIP	330	5%	1/10W
R610	1-216-295-91	SHORT	0		
R611	1-216-295-91	SHORT	0		
		< SWITCH >			
S401	1-571-308-11	SWITCH, SLIDE (COMMAND MODE)			
		< VIBRATOR >			
X301	1-579-834-11	VIBRATOR, CRYSTAL (33MHz)			
X401	1-579-175-11	VIBRATOR, CERAMIC (10MHz)			
**********					
*	1-665-357-11	POWER SW BOARD			
		**********			
		< CONNECTOR >			
CN703	1-750-186-11	CONNECTOR, BOARD TO BOARD 6P			
		< RESISTOR >			
R701	1-249-417-11	CARBON	1K	5%	1/4W F
R702	1-249-419-11	CARBON	1.5K	5%	1/4W F
R703	1-249-421-11	CARBON	2.2K	5%	1/4W F
R704	1-247-843-11	CARBON	3.3K	5%	1/4W
R705	1-249-427-11	CARBON	6.8K	5%	1/4W F
R706	1-249-431-11	CARBON	15K	5%	1/4W
R707	1-249-427-11	CARBON	6.8K	5%	1/4W F
R708	1-249-421-11	CARBON	2.2K	5%	1/4W F
R709	1-247-843-11	CARBON	3.3K	5%	1/4W
		< SWITCH >			
S701	1-554-303-21	SWITCH, TACTILE (DISC 1)			
S702	1-554-303-21	SWITCH, TACTILE (DISC 2)			
S703	1-554-303-21	SWITCH, TACTILE (DISC 3)			
S704	1-554-303-21	SWITCH, TACTILE (DISC 4)			
S705	1-554-303-21	SWITCH, TACTILE (DISC 5)			
S706	1-554-303-21	SWITCH, TACTILE (CONTINUE)			
S707	1-554-303-21	SWITCH, TACTILE (SHUFFLE)			
S708	1-554-303-21	SWITCH, TACTILE (PROGRAM)			
S709	1-554-303-21	SWITCH, TACTILE (REPEAT)			
S710	1-554-303-21	SWITCH, TACTILE (DISC CHECK)			
S751	1-554-118-00	SWITCH, PUSH (1 KEY)(**I**/⏻)			
**********					

SENSOR | TABLE MOTOR

Ref. No.	Part No.	Description	Remark
*	1-647-362-11	SENSOR BOARD **********	
		< CONNECTOR >	
CN801	1-573-383-11	PIN, CONNECTOR (PC BOARD) 2P	
CN802	1-750-243-11	SOCKET, CONNECTOR 6P	
		< DIODE >	
D801	8-749-924-18	DIODE PHOTO INTERRUPTER RPI-1391	(TABLE SENSOR)
D802	8-749-924-30	DIODE PHOTO REFLECTOR GP2S28	(DISC SENSOR)
		< RESISTOR >	
R801	1-249-416-11	CARBON 820 5% 1/4W F	
R802	1-249-406-11	CARBON 120 5% 1/4W F	
*	1-647-364-11	TABLE MOTOR BOARD **********	
		< MOTOR >	
M801	A-4660-525-A	MOTOR ASSY, ROTARY (TABLE)	
		MISCELLANEOUS **********	
66	1-782-220-11	WIRE (FLAT TYPE)(9 CORE)	
70	1-782-219-11	WIRE (FLAT TYPE)(17 CORE)	
118	1-782-816-11	WIRE (FLAT TYPE)(6 CORE)	
121	1-500-386-11	FILTER, CLAMP (FERRITE CORE)	
⚠122	1-575-651-21	CORD, POWER (AEP)	
⚠122	1-590-926-11	CORD, POWER (US,CND)	
⚠122	1-696-845-11	CORD, POWER (AUS)	
155	1-466-996-11	ENCODER, ROTARY	
159	1-765-443-11	WIRE (FLAT TYPE)(23 CORE)	
161	1-452-925-21	MAGNET ASSY	
⚠201	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP	
202	1-769-069-11	WIRE (FLAT TYPE)(16 CORE)	
FL810	1-517-664-11	INDICATOR TUBE, FLUORESCENT	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M801	A-4660-525-A	MOTOR ASSY, ROTARY (TABLE)	
M802	A-4660-914-A	MOTOR ASSY, LOADING (LOADING)	
⚠T601	1-429-956-11	TRANSFORMER, POWER (US,CND)	
⚠T601	1-431-076-11	TRANSFORMER, POWER (AEP,AUS)	

Ref. No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS **********	
	1-475-606-11	REMOTE COMMANDER (RM-DC525)	
	1-558-271-11	CORD, CONNECTION (AUDIO, 108cm)	
	3-810-765-32	MANUAL,COMMONNESS INSTRUCTION (FOR CONTROL-A1) (ENGLISH) (US,CND,AUS)	
	3-810-765-42	MANUAL,COMMONNESS INSTRUCTION (FOR CONTROL-A1) (ENGLISH, FRENCH, GERMAN, SPANISH, DUTCH, SWEDISH, ITALIAN, PORTUGUESE, CHINESE) (AEP)	
	3-862-359-11	MANUAL, INSTRUCTION (ENGLISH)	
	3-862-359-21	MANUAL, INSTRUCTION (FRENCH,SPANISH,PORTUGUESE)(AEP)	
	3-862-359-31	MANUAL, INSTRUCTION (GERMAN,DUTCH,ITALIAN,SWEDISH)(AEP)	
	4-981-643-01	COVER, BATTERY (FOR RM-DC525)	
		HARDWARE LIST **********	
#1	7-685-872-09	SCREW +BVTT 3X8 (S)	
#2	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
#3	7-685-648-79	SCREW (M3X12), TAPPING	
#4	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#5	7-621-772-00	SCREW +B 2X3	
#6	7-685-134-19	SCREW (+ PTPWH)(2.6X8)	
#7	7-621-255-15	SCREW +P 2X3	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

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